SHARP

LC-46HD1E
LC-52HD1E

ENGLISH
DEUTSCH
FRANÇAIS
ITALIANO

LCD COLOUR TELEVISION
LCD-FARBFERNSEHGERÄT
TÉLÉVISION COULEUR À ÉCRAN À CRISTAUX LIQUIDES (LCD)
TELEVISORE A COLORI LCD

OPERATION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUALE DI ISTRUZIONI

AQUOS

HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE
DVB Digital Video Broadcasting
HD ready
DOLBY DIGITAL
DOLBY PRO LOGIC II VIRTUAL SPEAKER

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SPECIAL NOTE FOR USERS IN THE U.K.

The mains lead of this product is fitted with a non-rewireable (moulded) plug incorporating a 13A fuse. Should the fuse need to be replaced, a BSI or ASTA approved BS 1362 fuse marked ♆ or ASTA and of the same rating as above, which is also indicated on the pin face of the plug, must be used.
Always refit the fuse cover after replacing the fuse. Never use the plug without the fuse cover fitted.
In the unlikely event of the socket outlet in your home not being compatible with the plug supplied, cut off the mains plug and fit an appropriate type.

DANGER:
The fuse from the cut-off plug should be removed and the cut-off plug destroyed immediately and disposed of in a safe manner.
Under no circumstances should the cut-off plug be inserted elsewhere into a 13A socket outlet, as a serious electric shock may occur.
To fit an appropriate plug to the mains lead, follow the instructions below:

IMPORTANT:
The wires in the mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this product may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
• The wire which is coloured blue must be connected to the plug terminal which is marked N or coloured black.
• The wire which is coloured brown must be connected to the plug terminal which is marked L or coloured red.
Ensure that neither the brown nor the blue wire is connected to the earth terminal in your three-pin plug.
Before replacing the plug cover make sure that:
• If the new fitted plug contains a fuse, its value is the same as that removed from the cut-off plug.
• The cord grip is clamped over the sheath of the mains lead, and not simply over the lead wires.
IF YOU HAVE ANY DOUBT, CONSULT A QUALIFIED ELECTRICIAN.

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OPERATION MANUAL ENGLISH

- The illustrations and on-screen displays in this operation manual are for explanation purposes and may vary slightly from the actual operations.
- The examples used throughout this manual are based on the LC-52HD1E model.

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WARNING:
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Dear SHARP customer

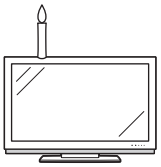
Thank you for your purchase of the SHARP LCD colour TV product. To ensure safety and many years of trouble-free operation of your product, please read the Important Safety Precautions carefully before using this product.

Important Safety Precautions

- Cleaning—Unplug the AC cord from the AC outlet before cleaning the product. Use a damp cloth to clean the product. Do not use liquid cleaners or aerosol cleaners.
- Water and moisture—Do not use the product near water, such as bathtub, washbasin, kitchen sink, laundry tub, swimming pool and in a wet basement.
- Do not place vases or any other water-filled containers on this product.
  The water may spill onto the product causing fire or electric shock.

- Stand—Do not place the product on an unstable cart, stand, tripod or table. Doing so can cause the product to fall, resulting in serious personal injuries as well as damage to the product. Use only a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the product. When mounting the product on a wall, be sure to follow the manufacturer's instructions. Use only the mounting hardware recommended by the manufacturer.
- When relocating the product placed on a cart, it must be moved with utmost care. Sudden stops, excessive force and uneven floor surface can cause the product to fall from the cart.

- Ventilation—The vents and other openings in the cabinet are designed for ventilation. Do not cover or block these vents and openings since insufficient ventilation can cause overheating and/or shorten the life of the product. Do not place the product on a bed, sofa, rug or other similar surface, since they can block ventilation openings. This product is not designed for built-in installation; do not place the product in an enclosed place such as a bookcase or rack, unless proper ventilation is provided or the manufacturer's instructions are followed.
- The LCD panel used in this product is made of glass. Therefore, it can break when the product is dropped or impact applied. If the LCD panel is broken, be careful not to be injured by broken glass.
- Heat sources—Keep the product away from heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).
- To prevent fire, never place any type of candle or naked flames on the top or near the TV set.
- To prevent fire or shock hazard, do not place the AC cord under the TV set or other heavy items.
- Do not display a still picture for a long time, as this could cause an afterimage to remain.
- There is power consumption always if main plug is connected.
- Servicing—Do not attempt to service the product yourself. Removing covers can expose you to high voltage and other dangerous conditions. Request a qualified person to perform servicing.



The LCD panel is a very high technology product, giving you fine picture details.
Due to the very large number of pixels, occasionally a few non-active pixels may appear on the screen as a fixed point of blue, green or red.
This is within product specifications and does not constitute a fault.

Precautions when transporting the TV

When transporting the TV, never carry it by holding onto the speakers. Be sure to always carry the TV by two people holding it with two hands — one hand on each side of the TV.

Trademarks

- "HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC."

DOLBY DIGITAL

DOLBY PRO LOGIC II VIRTUAL SPEAKER

- Manufactured under license from Dolby Laboratories.
- "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

- The "HD ready" Logo is a trademark of EICTA.

- The DVB logo is the registered trademark of the Digital Video Broadcasting - DVB - project.

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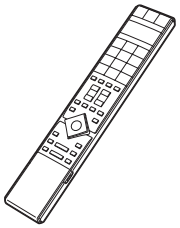
Supplied accessories

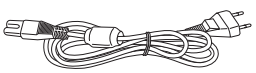
Remote control unit (×1)



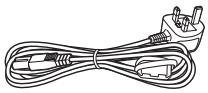
Pages 7 and 8

AC cord (×1)

(For Europe, except U.K. and Eire)



(For U.K. and Eire)

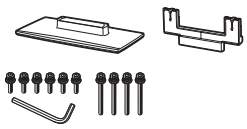


Page 5

Cable tie (×1)

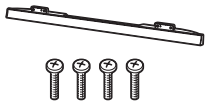
Page 5

Stand unit (×1)



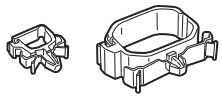
Page 4

Speaker unit (×1)



Page 3

Cable clamp (Small ×1, Large ×1)

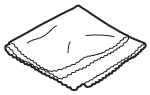


Page 5

Stand hole cover (×2)

Page 4

Cloth (×1)



Screwdriver (×1)

Page 3

- Operation manual (This publication)
- "AAA" size alkaline battery (×2)

Preparation

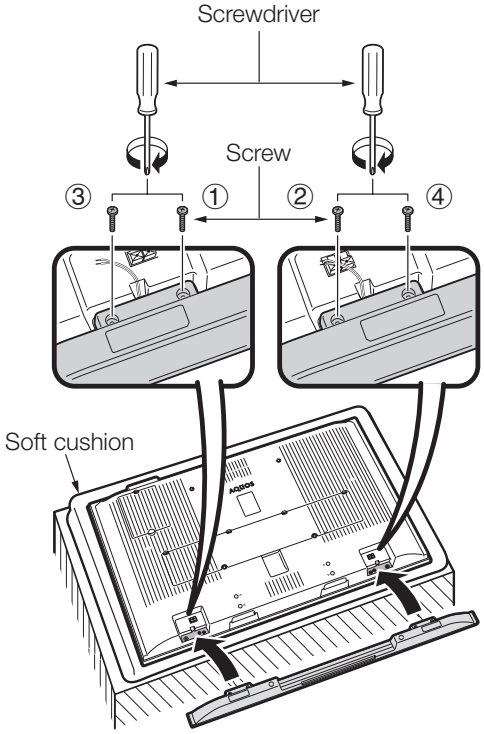
Attaching the speaker unit

- Before attaching (or detaching) the speaker unit, unplug the AC cord from the AC INPUT terminal.
- Before performing work spread cushioning over the base area to lay the TV on. This will prevent it from being damaged.

1 Confirm that there are 4 screws and a screwdriver supplied with the speaker unit.

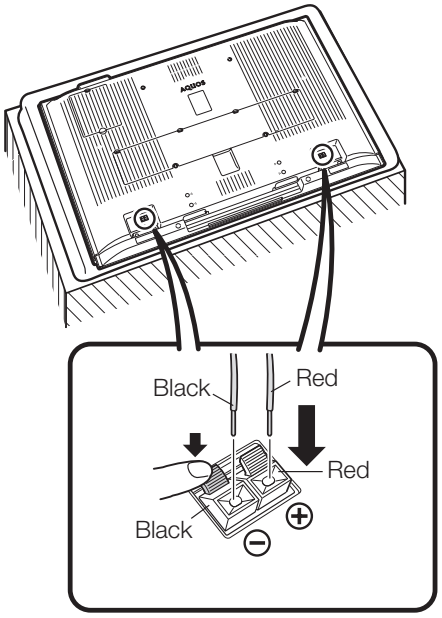
2 Insert the projections on the speaker unit into the corresponding slots on the TV, then fasten the screws.

Insert and tighten the 4 screws with the screwdriver in the order of ①, ②, ③ and ④.



3 Connect the ends of the cables to the speaker terminals as shown.

Connect the leads to the speaker terminals of the same colour.



NOTE

- To detach the speaker unit, perform the steps in reverse order.

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Attaching the stand unit

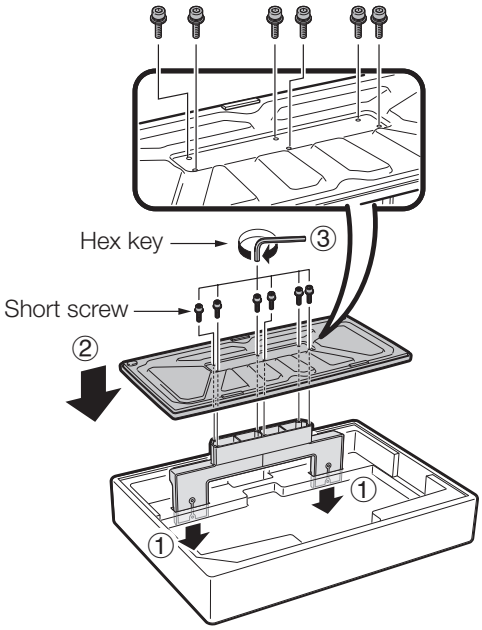
- Before attaching (or detaching) the stand, unplug the AC cord from the AC INPUT terminal.
- Before performing work spread cushioning over the base area to lay the TV on. This will prevent it from being damaged.

CAUTION

- **Attach the stand in the correct direction.**
- **Be sure to follow the instructions. Incorrect installation of the stand may result in the TV falling over.**

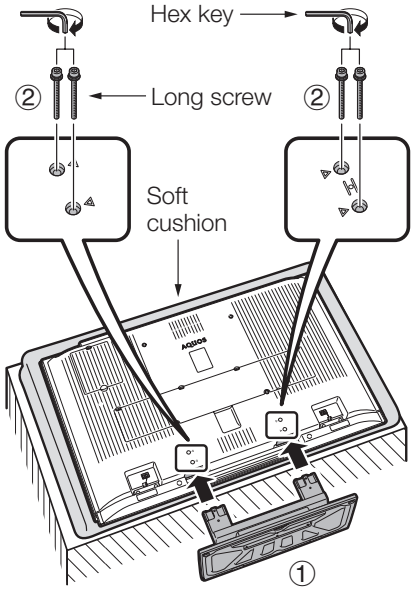
1 Confirm that there are 10 screws (6 short screws and 4 long screws) with the stand unit.

2 Attach the supporting post for the stand unit onto the base using the box for the stand as shown.



3 ① Insert the stand into the openings on the bottom of the TV. (Hold the stand so it will not drop from the edge of the base area.)

② Insert and tighten the 4 long screws into the 4 holes on the rear of the TV.

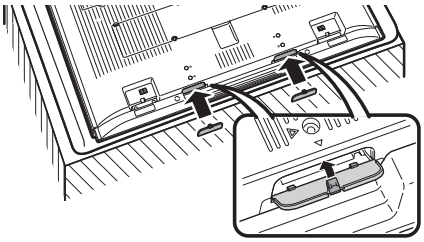


Detaching the stand unit

1 Repeat steps as explained in **Attaching the stand unit** in reverse order.

2 Attach the stand hole covers.

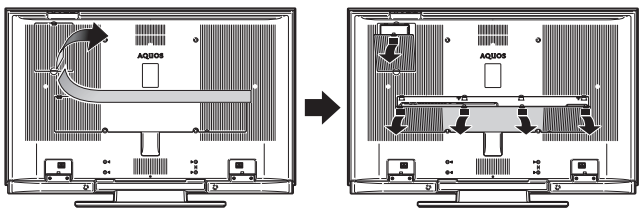
(Align the tabs of the covers with the holes on the TV, and press until they lock into place.)



Removing the terminal cover

Before making any connections, remove the protective adhesive tape from the cover.

Then press down on the upper hooks and remove the rear terminal cover towards you.



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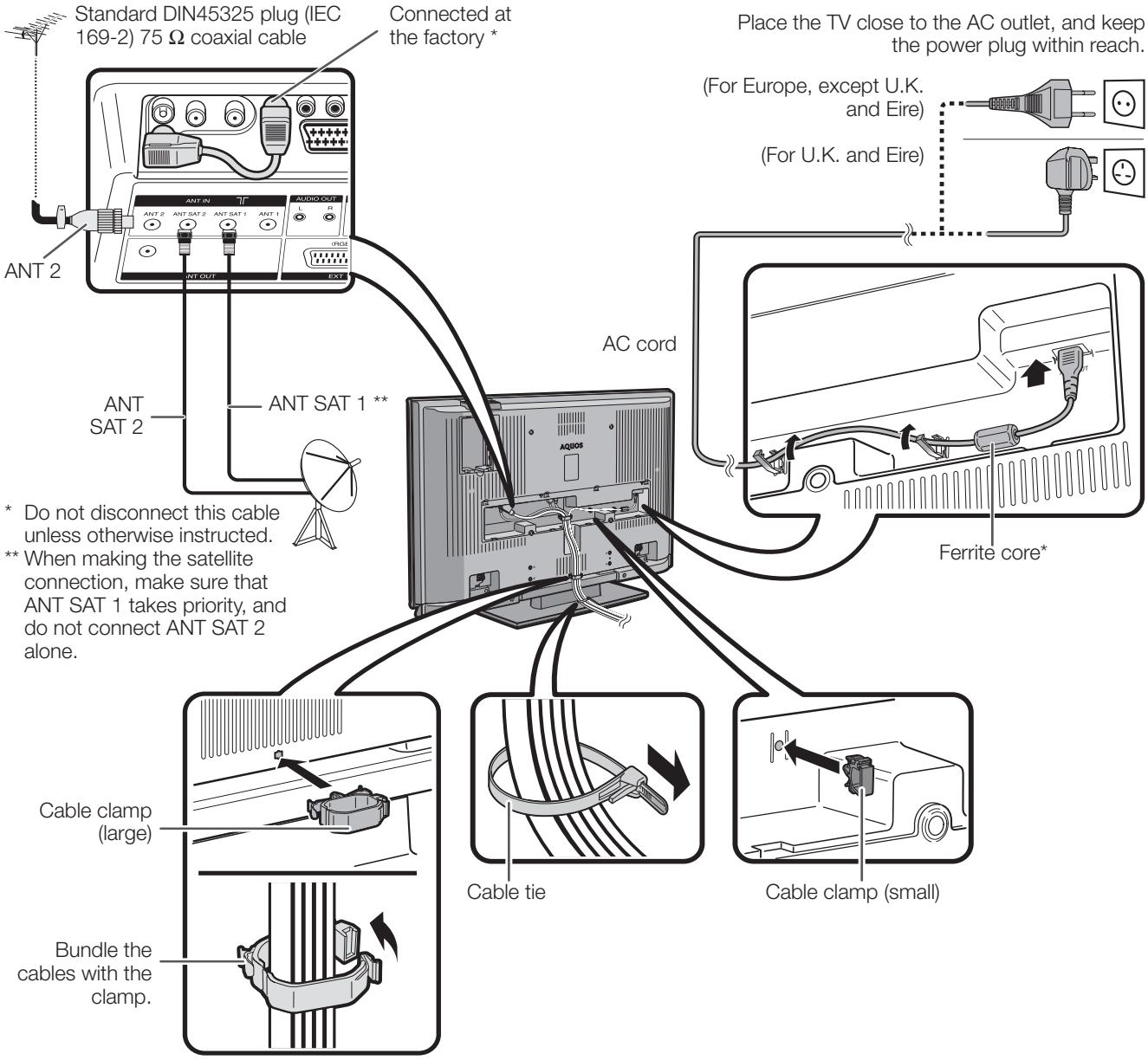
Setting the TV


Standard DIN45325 plug (IEC 169-2) 75 Ω coaxial cable
Connected at the factory *
Place the TV close to the AC outlet, and keep the power plug within reach.
(For Europe, except U.K. and Eire)
(For U.K. and Eire)
ANT 2
AC cord
ANT SAT 2
ANT SAT 1 **
* Do not disconnect this cable unless otherwise instructed.
** When making the satellite connection, make sure that ANT SAT 1 takes priority, and do not connect ANT SAT 2 alone.
Ferrite core*
Cable clamp (large)
Bundle the cables with the clamp.
Cable tie
Cable clamp (small)

Antenna

Connect the antenna cable from your antenna-/cable socket or the (room-/roof) antenna for antenna input terminal on the back of your TV set to receive digitally/terrestrially broadcast stations.
An indoor antenna can also be used under good reception conditions. Passive and active room antennas are offered commercially. In an active antenna its power is supplied via the antenna input terminal.
The supply voltage (5V) must be correspondingly set under “Allow switching voltage”. (Page 35)

* Ferrite Core

The Ferrite Core should be permanently attached and never removed from the AC cord.

Setting the TV on the wall

- **This TV should be mounted on the wall only with the wall mount bracket available from SHARP. (Page 59) The use of other wall mount brackets may result in an unstable installation and may cause serious injuries.**
- **When you use the AN-52AG4 (SHARP) wall mount bracket, set the angle of the TV to 0° or 5°. Do not set the angle to more than 10°.**
- **Installing the LCD Colour TV requires special skill that should only be performed by qualified service personnel. Customers should not attempt to do the work themselves. SHARP bears no responsibility for improper mounting or mounting that results in accident or injury.**
- You can ask a qualified service personnel about using an optional bracket to mount the TV to the wall.

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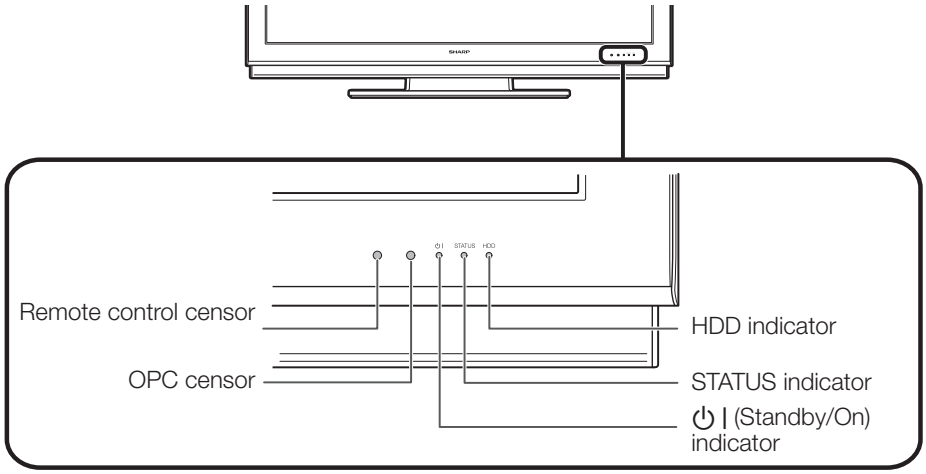
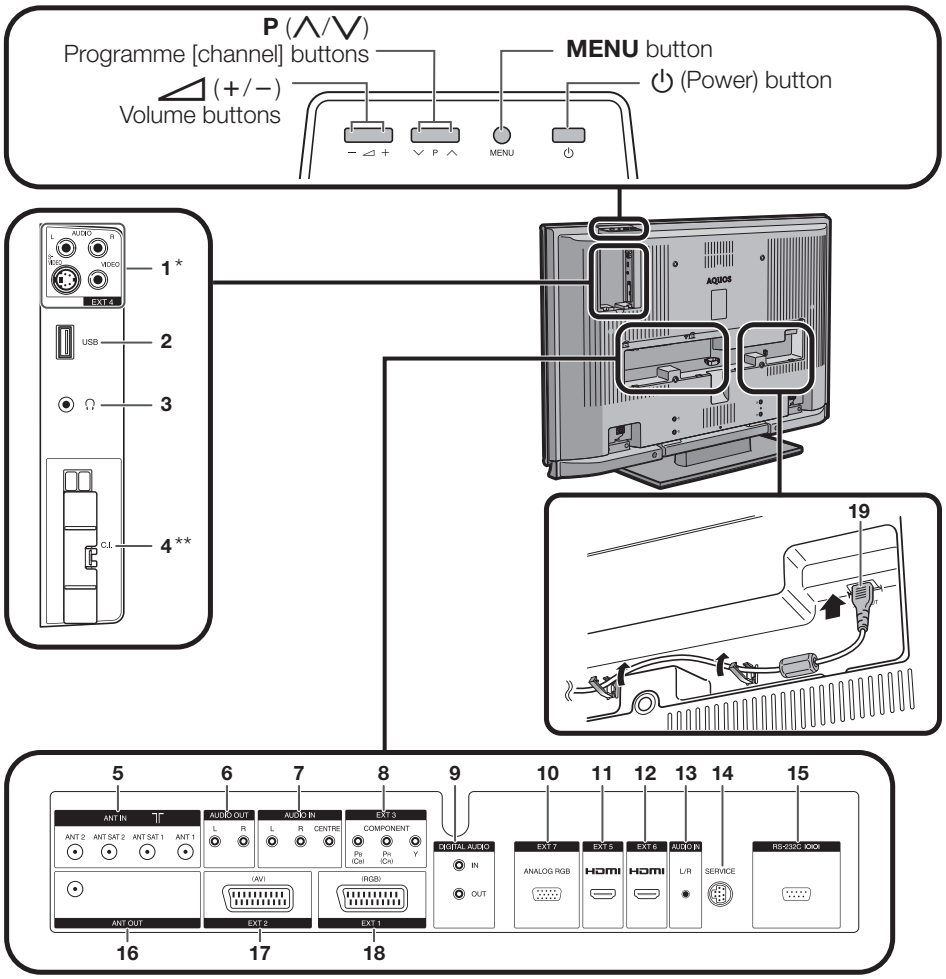
TV (Front view)



See page 12 for indictor status.

TV (Rear view)



1 EXT 4 terminals
* Do not connect S-VIDEO and VIDEO at the same time.

2 USB terminal
3 Headphones
4 COMMON INTERFACE slot (×2)
**Remove the cover when inserting the CI Module.

5 ANT IN terminals
6 AUDIO OUT terminals
7 AUDIO IN terminals
8 EXT 3 (COMPONENT) terminals
9 DIGITAL AUDIO terminals
10 EXT 7 (ANALOG RGB) terminal
11 EXT 5 (HDMI) terminal
12 EXT 6 (HDMI) terminal
13 AUDIO IN (L/R) jack
14 SERVICE socket
15 RS-232C terminal

16 ANT OUT terminal
17 EXT 2 (AV) terminal
18 EXT 1 (RGB) terminal

19 AC INPUT terminal

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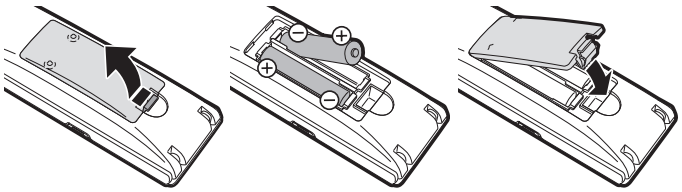
Inserting the batteries

Before using the TV for the first time, insert two “AAA” size batteries (supplied). When the batteries become depleted and the remote control unit fails to operate, replace the batteries with new “AAA” size batteries.

1 Open the battery cover.

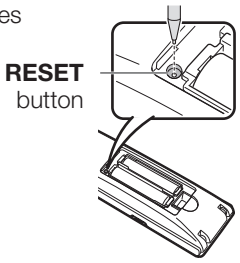
2 Insert two supplied “AAA” alkaline size batteries.
- Place batteries with their terminals corresponding to the (+) and (−) indications in the battery compartment.

3 Close the battery cover.



CAUTION

Improper use of batteries can result in chemical leakage or explosion. Be sure to follow the instructions below.
- Do not mix batteries of different types. Different types of batteries have different characteristics.
- Do not mix old and new batteries. Mixing old and new batteries can shorten the life of new batteries or cause chemical leakage in old batteries.
- Remove batteries as soon as they have worn out. Chemicals that leak from batteries can cause a rash. If you find any chemical leakage, wipe thoroughly with a cloth.
- When replacing the batteries, use alkaline batteries instead of manganese ones.
- Do not overuse the light-up function of the **LIGHT** button, doing so may shorten the battery life. Replace the batteries when the light on the LCD window or the light-up function becomes weak or when the window becomes blurry.
- Do not continue to use the remote control unit with the batteries running low. This may result in error message or malfunction. Should this happen replace the batteries and leave it unused for a while. Otherwise, you may open the rear battery cover and press the **RESET** button. When you press the **RESET** button, your Universal remote control settings will be deleted.
- The remote control unit has a internal memory of external devices. In order not to lose the data, replace the batteries quickly. If the manufacturer code is initialised and lost, you can input the manufacturer code again. (See page 55.)
- The batteries supplied with this product may have a shorter life expectancy due to storage conditions.
- If you will not be using the remote control unit for an extended period of time, remove the batteries from it.

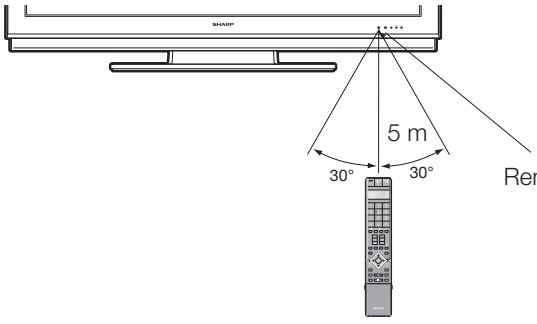


Note on disposing batteries:

The batteries provided contain no harmful materials such as cadmium, lead or mercury.
Regulations concerning used batteries stipulate that batteries may no longer be thrown out with the household rubbish. Deposit any used batteries free of charge into the designated collection containers set up at commercial businesses.

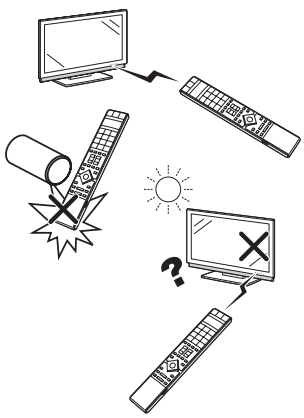
Using the remote control unit

Use the remote control unit by pointing it towards the remote control sensor. Objects between the remote control unit and sensor may prevent proper operation.



Cautions regarding the remote control unit

- Do not expose the remote control unit to shock.
  In addition, do not expose the remote control unit to liquids, and do not place in an area with high humidity.
- Do not install or place the remote control unit under direct sunlight. The heat may cause deformation of the unit.
- The remote control unit may not work properly if the remote control sensor of the TV is under direct sunlight or strong lighting. In such case, change the angle of the lighting or TV, or operate the remote control unit closer to the remote control sensor.



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Remote control unit

NOTE

- The symbols DVD, STB and VCR indicate that the buttons become available in respective operating mode when using as a universal remote control.

1 ⏻ | **(TV Standby/On)** (Page 12)

2 **LIGHT** DVD STB VCR
When pressed, buttons that are frequently used (**P** ∧/∨, +/−, **0 - 9** numeric buttons, ⇄ and ⏎) will light. The lighting will turn off if no operations are performed within about 5 seconds. This button is used for performing operations in low-light situations.

3 **FUNCTION** DVD STB VCR
Press this button briefly (for more than 0.2 second), and the remote control switches for DVD, SetTopBox or VCR operation and currently controlled devices will be indicated in the LCD window.
See page 55 for how to use this unit as a universal remote control.

4 **LCD window** DVD STB VCR
This screen shows which device you are currently controlling. (TV, DVD, STB or VCR).

5 **0 - 9 numeric buttons** STB
Set the channel.
Enter desired numbers or letters as if on a mobile keypad.
Set the page in teletext mode.

6 ⇄ **(Flashback)**
Press to return to the previous image in normal viewing mode.

7 **RADIO**
Switch between RADIO and TV mode.

8 **EPG**
Display the EPG screen.

9 **(+/−) (Volume)**
Increase/decrease TV volume.

10 **(Mute)**
TV sound on/off

11 **Colour (RED/GREEN/YELLOW/BLUE) buttons**
In Teletext mode: Select a page. (Page 40)
When no other menu screen is active, pressing one of the coloured buttons will initiate the following action.

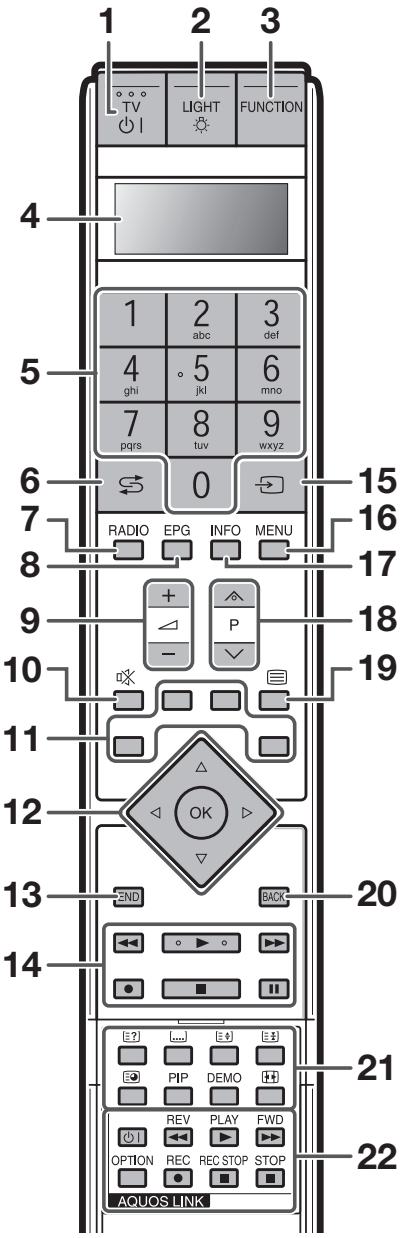
RED
Opens the DR archive. (Page 44)

GREEN
Opens the teletext subtitle size selection screen.

YELLOW
Calls last viewed station/external source.

BLUE
Displays the programme info screen.

On the menu screen, the coloured buttons are used to select correspondingly the coloured items on the screen.



12 ▲/▼/◀/▶ **(Cursor)** DVD
Select a desired item on the setting screen.
If no other menu screen is active, press ▲/▼, and move the picture up/down with ▲/▼/◀/▶.

OK DVD STB
TV/DVD/STB: Execute a command within the menu screen.
TV: Display the station list or favourite list when no other menu screen is running.

13 **END**
Exit the menu screen.
If menu screen is not active, pressing this button displays programme information.

14 **Buttons for HDD operation**
These are used for basic HDD recording/playback operation integrated with this TV.

15 ⏎ **(External sources)**
Select an external source. Press and move with ▲/▼.

16 **MENU** DVD
TV: Menu screen on/off.
DVD: Title menu on/off.

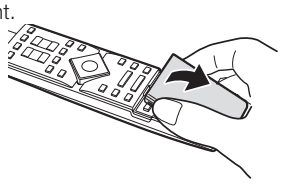
17 **INFO**
Press to open the Index menu. (Page 31)
Teletext: Display Teletext page 100.

18 **P (∧/∨)** DVD STB VCR
Select the TV channel.
In analogue TV mode, external sources can also be selected.

19 **(Teletext)**
Select teletext. (Page 39)

20 **BACK**
Return to the previous menu screen.

21 **Buttons for teletext and other useful features**
Flip open the remote control cover on the front.



(Reveal hidden Teletext) (Page 40)

(Subtitle for Teletext)
Subtitle on/off. (Page 40)

(Top/Bottom/Full)
Set the area of magnification in analogue teletext mode. (Page 40)

(Freeze/Hold) (Page 40)

(Subpage) (Page 40)

PIP
Press to enter Picture-in-picture mode. (Page 23)

DEMO
Demonstrate the 100 Hz effects in a dual screen format. (Page 32)

(Wide modes)
Select the wide mode. (Page 39)

22 **AQUOS LINK buttons** DVD VCR
If external equipment such as a AQUOS BD Player is connected via HDMI cables and is AQUOS LINK compatible, you can use these AQUOS LINK buttons. See page 19 for details.
In DVD or VCR mode, press **OPTION** to pause the picture.
Not available when operating STB except powering on the device.

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Initial installation

Initial installation overview

Follow the below steps one by one when using the TV for the first time. Some steps may not be necessary depending on your TV installation and connection.

❶ Connect the AC cord (Page 5)

❷ Connect antenna (Page 5)

Analogue/DVB-C/DVB-T antenna:
Plug the antenna of antenna system, cable system, or room antenna to ANT 2.
Cable is already connected between ANT 1 and ANT OUT at the factory.

Satellite antenna:
Connect an antenna plug, e.g., from the antenna change over switch or from the twin-LNC of the satellite system to ANT SAT 1 and ANT SAT 2.
When connecting only one SAT antenna cable, connect it to ANT SAT 1.

❸ Prepare remote control unit (Page 7)

❹ Turn on the TV power (Page 12)

❺ Conduct initial auto installation (Page 10)

❻ Connect external devices (Pages 14-18)

If desired connect external devices such as a DVD recorder here.

❼ Connect sound components (Page 22)

If desired connect sound components (amplifier/speakers) here.

❽ Insert CA Card (Page 28)

When using a CI Module and a CA Card to receive coded stations, insert CA Card as instructed.

❾ Adjust DVB-T antenna (Page 11)

If necessary position or align DVB-T antenna.

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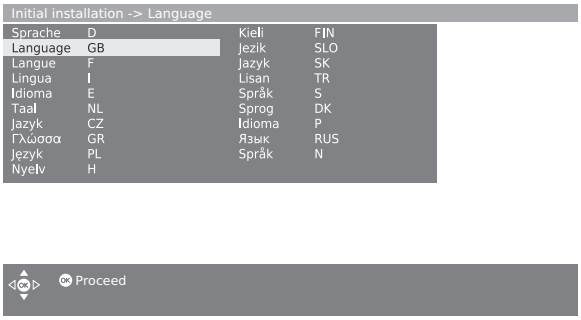
Initial installation wizard

When the TV powers on for the first time after purchase, the initial auto installation wizard appears. Follow the menus and make the necessary settings one after another.



NOTE

- You can repeat this installation process by conducting the "Repeat initial installation" command. Press **INFO**, the option is located in the third line from the top.

Buttons to be used:

▲/▼/◀/▶:

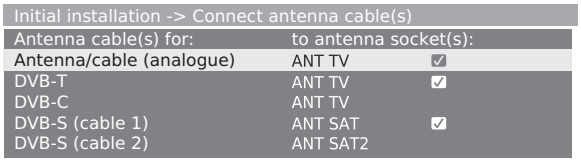
Move the cursor and select the settings.

OK:

Press to confirm and proceed to the next step.

YELLOW:

In some screens you can select or deselect items with **YELLOW**. When an item is selected, it is marked with ✔.


Initial installation -> Connect antenna cable(s)
Antenna cable(s) for: to antenna socket(s):
Antenna/cable (analogue) ANT TV ✔
DVB-T ANT TV ✔
DVB-C ANT TV
DVB-S (cable 1) ANT SAT ✔
DVB-S (cable 2) ANT SAT2

BACK:

Press to go back one step.

END:

If this icon is visible, you can exit the wizard.

Table of setting options in initial installation wizard

There are numerous settings in the initial installation wizard. When in doubt, refer to the table below so you don't get overwhelmed.

Items	Explanation
Language	Select the language.
Connect antenna cable(s)	**Antenna/cable (analogue)**: analogue stations via cable/antenna **DVB-T:** digital, terrestrial stations **DVB-C:** digital stations via cable **DVB-S (cable 1):** digital stations via satellite **DVB-S (cable 2):** digital stations via satellite
Antenna DVB-T	If you are using an active antenna, then select yes (5V) for the antenna power supply.

Items	Explanation
Antenna DVB-C	The conventional settings will be derived from the selection of set location. Only change this if you know other symbol rates and modulation types or if you have to specify the network ID for your cable network (information available from your cable network provider). If you want to run the station search independently of the channel grid, select frequency search for the search method.
Antenna DVB-S	Select which satellite(s) you receive from a list. For more than one satellite, select the type of your changeover switch or communal satellite system additionally. Ask your dealer in this regard.
High band	Specify here whether the high band of the selected satellite is to be searched in addition to the low band.
LNB frequencies Low Band/High Band	Normally, you do not need to change the values for high and low band, unless the LNC (LNB) of your satellite system uses a different oscillator frequency (important for the frequency display). After you have made these settings, you should receive the picture and sound of the selected satellites (only with Astra1 and HOTBIRD).
Symbol rates	The symbol rates are specified by the satellite provider and do not normally need to be changed.
Favoured signal source	Select the signal source from a list, the station of which is to be at the top of your station list (starting with station slot 1). • If you want to use the AV Link function with an externally connected recorder, the analogue stations have to be between station slot 1 and 99.
Start search	Start the automatic station search with **OK**. First TV stations, then radio stations are searched for. The stations found in the automatic search are divided into the appropriate station blocks depending on the previously selected antenna cables (signal sources). Subsequently the stations can only be re-sorted within these blocks. At the beginning of the station list you will find the block with the stations of the preferred signal source. Any mixed sorting of stations from different signal sources is only possible with the favourites list.
Connecting additional devices	In conclusion the connection wizard will start; with their help you can register and set your video devices or decoders, and connect them to the TV set. DVD players and DVD recorders are already registered at the factory. You can start the connection wizard manually later and add new devices. Further information is available on page 15 (Connection wizard) and page 22 (Speaker/amplifier connection).
Room antenna	With good reception conditions a room antenna can be used for DVB-T (socket ANT2).
Active antenna	Under less favorable reception conditions, it is advisable to use an active antenna which has to be set accordingly in the initial installation or in the "TV Menu > Connections > Antenna DVB > Antenna DVB-T". (See "Antenna DVB-T" on this page).
Unidirectional antenna	If the location is outside of the normal transmission range then a directional antenna can be used to improve reception quality.

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Positioning/aligning DVB-T antenna

If you are receiving one or more DVB-T stations with picture and sound interference then you should change the installation location and alignment of the antenna. Ask your dealer to tell you which channels are used to broadcast the DVB-T stations in your region.

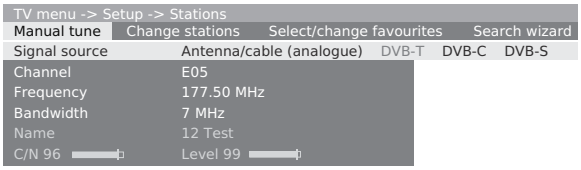
Prerequisite: In normal TV mode, with no other menu screen active, and a DVB-T station is received and selected.

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Setup”, and then press **OK**.

3 Press ▲/▼ to select “Stations”, and then press **OK**.

Press ▲/▼ to select “Manual tune”, and then press **OK**.



- The signal source is already on DVB-T due to the station preselection.

4 Position and align the antenna in such a manner that maximum values for C/N and Level are obtained.

5 Press **BLUE** to start search.

Search for DVB-T stations one after another and compare values for C/N and Level.

Then position/align the antenna to the weakest station so that maximum values for C/N and Level are obtained.

6 Thereafter perform an automatic search for all DVB-T stations.

Item	Explanation
Bandwidth	Depending on the selected channel and country the associated bandwidth of 7 or 8 MHz will be set automatically.

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Daily operation

Switching on/off

Turning on/off the power

Press ⏻ on the TV.
Switch it off by pressing ⏻ on the TV.

- However, please bear in mind that EPG data (electronic programme guide) will be lost, and programmed timer recordings will not be performed by the TV.

Standby mode

If the TV set is switched on, you can switch it to standby by pressing ⏻ | on the remote control.

Switching on from standby

From standby, press ⏻ | on the remote control or pressing any of the numeric buttons **0 - 9**.
Or, switch on the TV set with **OK**, you can then see the station list and select a station.

Switching on the radio

From standby, press **RADIO** on the remote control.

TV indicator status

There are three indicators at the front of the TV. Refer to the table for each LED status.

⏻ | indicator	Status
Off	Power off
Blue	Power on
Red	Standby

STATUS indicator	Status
Red	On Timer is programmed.
Red flashing	Receiving remote control command
Green	HDD recording timer is programmed.
Green flashing	Receiving EPG data
Orange	Both HDD recording timer and On Timer are programmed.

HDD indicator	Status
Red	HDD recording in progress
Green	Archive playback or Time Shift recording in progress

NOTE

- If you are not going to use this TV for a long period of time, be sure to remove the AC cord from the power outlet.
- Weak electric power is still consumed even when ⏻ is turned off.

Changing channels

With P∧/P∨:

Press **P∧/P∨** to select channels.

- The station display with audio format displays briefly.
- If favourites are set, only the registered channels are selected with **P∧/P∨**. (Page 13)
- The symbols for the audio format is provided on page 13.
- If there are additional languages or DVB subtitles for DVB stations, its selections are shown under the station display. (Page 13)

With 0 - 9:

Press **0 - 9** to select channels.

With station list:

1 Press **OK** with no other menu screen active. (If favourites list is displayed instead, press **RED**.)

2 Press ▲/▼/◀/▶ or **0 - 9** to select the desired channel in the station list, and then press **OK** to tune in.

- Press **RED** to go to the favourites list.
- Press **BLUE** to sort the list according to "alphabetical" or "numerical".
- If sorted alphabetically, enter the initial letters with **0 - 9** like on a mobile phone keypad. The first station for the specified letters is marked.

To delete, restore, move, and rename stations from the station list

While in the station list, press **YELLOW** (Change stations).

Delete

Select a station to delete, and then press **RED** (Delete). Mark more stations with ▲/▼/◀/▶ or **0 - 9**, if desired. Confirm with **OK** or cancel with **RED**.

Restore stations

To restore station(s) that you have already deleted, select a station to restore, and then press **GREEN** (Restore stations). Confirm with **OK**.

- The restored station is sorted according to its signal source at the end of the respective signal block.

Move

Select a station to move, and then press **YELLOW** (Move). Mark more stations with ▲/▼/◀/▶ or **0 - 9**, if desired. Press **OK** to finish marking.

Press ▲/▼/◀/▶ or **0 - 9** to select the position to move to. Confirm with **OK** or cancel with **YELLOW**.

- Make sure to select the appropriate block of channels or destination when moving.

Rename

Select a station to rename, and then press **BLUE** (Rename). Press any of the numeric buttons **0 - 9** to select the desired character. Remember to press and toggle the numeric button quickly, for the transition to the next digit is rather quick. Repeat until the new name is fully spelt out. Confirm with **OK** or cancel with **BLUE**.

- The name can be up to 9 characters.
- Available only in the analogue TV mode.

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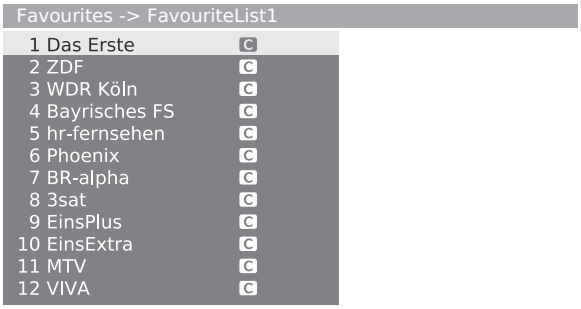
With the favourites lists:
You can save and select your favourite stations in 6 favourites lists (e.g. for multiple users). Each favourites list can contain up to 99 stations. After initial installation, 10 stations from the station list are already stored in the first list. Change the favourites list to suit your requirements (see “Select/change favourites” on page 37).

1 Press **OK** with no other menu screen active.

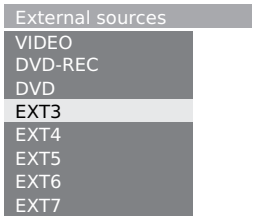


2 Press **RED** to display the favourite list.

3 Press **0 - 9** or ▲/▼/◀/▶ to select the desired station, and then press **OK** to register as a favourite.
RED: Back to the station list
GREEN: Scan all stations (as in slide show) of the currently selected favourites list. Press **OK** to end scanning.
YELLOW: Change the favourites list. (Page 37)
◀/▶: Move to the previous/next favourites list.

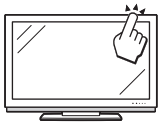
Selecting external video source

Once the connection is made, press ⇥ to display the External Sources screen, and then press ▲/▼ to switch over to the appropriate external source with **OK**.
You can also select an external source via the station list.



Operation without remote control

This function is useful when there is no remote control within your reach.



1 Press **MENU** briefly to display the direct control screen.
- You can adjust the following items: “Operating mode”, “External sources”, “Brightness”, “Contrast”, “Wide modes” and “Service”.
- “Service” is the item reserved only for service personnel.

2 Select the item by pressing **P** ∧/∨.

3 Select or adjust by pressing ◿ +/−.

NOTE
- The direct control menu screen will disappear if left unattended for several seconds.

Status display

Press **END**, a status display appears for a few seconds.

- In the top line you can see the number and name of the station, the title of the programme and the audio format. The time and, if activated, the alarm time/ alarm and switch-off time are displayed. Go to “TV menu > Setup > Miscellaneous > On-screen displays” for how to customise the settings for the status display.

Audio format	Description
Mono	Mono audio transmission analogue
2-sound	Two-sound transmission (Sound1/Sound2) analogue
Stereo	Stereo sound transmission analogue or digital (PCM)
Dolby D	Dolby Digital sound transmission (DD)
MPEG	MPEG sound transmission
, , , , , , , , ,	These symbols refer to the number of audio signals and optimum position/number of speakers (upper edge facing front).

Additional DVB options

In the status display additional selection possibilities can be offered for specific programmes depending on the DVB programme provider.

Press one of the **coloured buttons** or ☰ during the status display, and the associated selection menu appears.
RED: Channel selection for multi-channel providers
GREEN: Language/audio selection
☰: DVB subtitles/teletext
- The selection menus are only available as long as the status display is shown.

Item	Description
DVB subtitles	The subtitle selection refers exclusively to DVB subtitles and is not offered by all stations. Many stations only transmit subtitles by teletext. You can make general settings for DVB subtitles under “TV menu > Setup > Miscellaneous > DVB subtitles”.
New programme	The selection line is automatically displayed briefly, if a new programme begins with options that are different from those of the previous programme, or if you switch to a different station.

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Connecting external devices

The TV's integrated Connection wizard helps you connect new external devices and make cable changes. Before actually connecting the external device, run the Connection wizard and register the equipment to be connected.

Before connecting ...

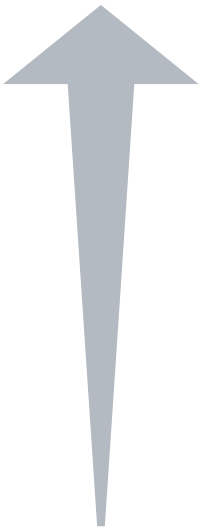
Carefully read the operation manual of each external device for possible connection types. This also helps you get the best possible audiovisual quality to maximise the potential of the TV set and the connected device. Make a note of the type of your connection before running the wizard.

Note on higher picture and sound quality

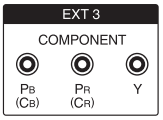
Higher quality is attained in ascending order. Refer to the manual of the device to be connected for the best possible connection.

Video terminals

Higher Quality



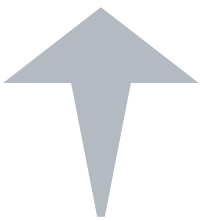
Standard Quality

		Remarks
① HDMI (EXT 5 or 6)		When using an HDMI/DVI conversion cable, audio must be fed in separately.
② COMPONENT (EXT 3)		
③ Euro SCART (EXT 1 or 2)		
④ S-VIDEO (EXT 4)		Do not connect S-VIDEO and VIDEO at the same time.
⑤ VIDEO (EXT 4)		

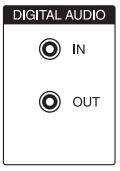
Audio terminals

Digital audio connection

Higher Quality

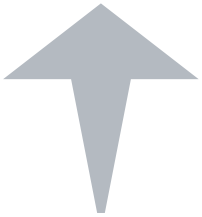


Standard Quality

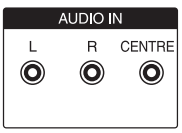
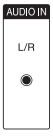
		Remarks
① DIGITAL AUDIO IN/OUT		In this connection you must specify the terminal to which the audio is fed. (Page 35) When using HDMI (EXT 5 or 6), the HDMI audio input takes priority.
② HDMI (EXT 5 or 6)		When using an HDMI/DVI conversion cable, audio must be fed in separately. DOLBY DIGITAL signals are not played back.

Analogue audio connection

Higher Quality



Standard Quality

① AUDIO IN (L-R-CENTRE)		
② AUDIO IN (L/R)		

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Connection wizard

The integrated Connection wizard shows you which terminal you should connect your equipment to. Connect the equipment according to the diagram and follow the messages one after the other.

NOTE

- New devices should not be connected until they have been registered in the connection wizard.

1 Press **MENU** and the TV menu screen displays.

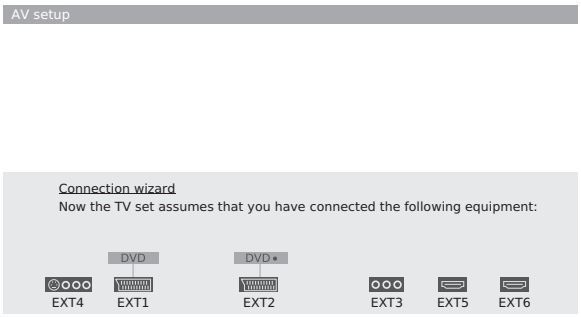
2 Press ◀/▶ to select “Connections”, and then press ▼ to move down.

3 Press ▲/▼ to select “AV setup”, and then press **OK**.

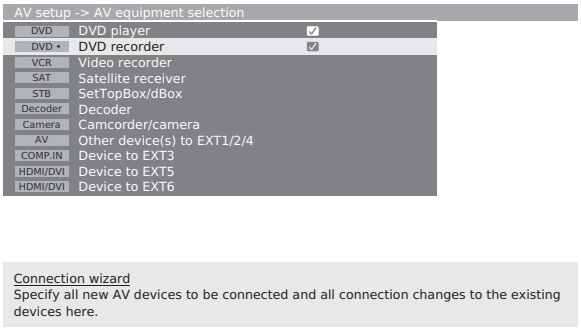
- The connection wizard screen displays.

4 Press **OK**. The screen shows a default screen, which may differ from the actual connection. Press **OK** to proceed.

Default screen



5 The AV equipment selection screen opens. Select device(s) to connect with ▲/▼, and then press **YELLOW** to mark. A marked device is indicated with ✔. For example, if connecting DVD recorder with HDMI terminal to the TV, select “HDMI/DVI” and then press **YELLOW** to register. You can connect other devices in the same way.


AV setup -> AV equipment selection
DVD DVD player
DVD • DVD recorder
VCR Video recorder
SAT Satellite receiver
STB SetTopBox/dBox
Decoder Decoder
Camera Camcorder/camera
AV Other device(s) to EXT1/2/4
COMP.IN Device to EXT3
HDMI/DVI Device to EXT5
HDMI/DVI Device to EXT6
Connection wizard
Specify all new AV devices to be connected and all connection changes to the existing devices here.

6 Next, the connection diagram shows how to connect the new or preset devices to the rear terminals. Press **OK** to proceed.

- If you specify a decoder for connection, you will be directed to “Select decoder station(s)” submenu.

7 Specify the signal type for the terminal. If you are not sure, select the automatic setting.

8 Follow the instructions on the screen for the rest of the process.

Items	Explanation
Connections and signal	The signal type of the devices that can be connected can vary greatly. If you are not sure, leave the setting for “Signal” on “Automatic CVBS/YC” (e.g. for DVD Player/Recorder) or “Autom.-VHS/SVHS” (e.g. VCR), otherwise select the right signal type.
Immediate playback	If the picture from a connected device is to be displayed immediately on the TV set during playback, select “yes”. A switching voltage is allowed so that you do not have to switch over manually to see the picture of the connected device. (See the operating manual for the connected reproduction device.) When playing from AV Link devices, the picture is always displayed immediately, regardless of the setting.
Assign digital audio input	Select the AV socket to which the device of which you want to hear the digital sound is connected. Connect the digital output of the external device to the digital input of the TV set. (Page 22) If a device with digital audio is not connected then select “no”.

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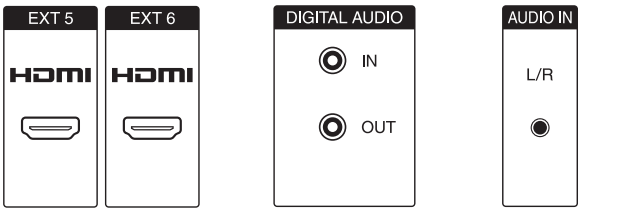
HDMI connection



(Optional audio connection)

(Optional audio connection)

The HDMI connections (High Definition Multimedia Interface) permit digital video and audio transmission via a connection cable from a player.
The digital picture and sound data are transmitted without data compression and therefore lose none of their quality. Analogue/digital conversion is no longer necessary in the connected devices, which also would result in quality losses.

HDMI/DVI conversion

Using a DVI/HDMI adapter cable, the digital video signals of a DVD or PC can also be played via the compatible HDMI connection. The sound must be fed in additionally.

HDMI and DVI both use the same HDCP copy protection method.

Connecting the HDMI device

In “Connection wizard > AV equipment selection”, select “HDMI/DVI”, and connect the device accordingly.

- If an HDMI/DVI conversion cable is used, audio signals must be fed separately to either DIGITAL AUDIO (IN) or analogue AUDIO IN (L/R).

NOTE

- Video noise may occur depending on the type of HDMI cable used. Make sure to use a certified HDMI cable.
- When playing an HDMI image, the best possible format for the picture will be detected and set automatically.

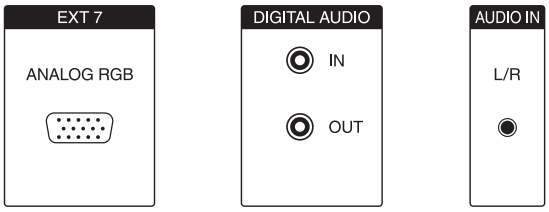
Supported video signals:

VGA, 576i, 576p, 480i, 480p, 720p, 1080i, 1080p
See page 18 for PC signal compatibility.

If a connected HDMI device is AQUOS LINK compatible, you can take advantage of versatile functions using the AQUOS LINK buttons on the remote control.

See pages 19 - 22 for details.

VGA/XGA connection (PC/ SetTopBox)



You can connect a PC or a SetTopBox (STB) to the EXT 7 (ANALOG RGB) terminal and thus use the screen of the TV set as an output device.

When connecting the PC, set the PC’s output resolutions according to the capabilities of the PC. For details, see page 18 for PC signal compatibility.

When connecting a SetTopBox, set the following screen resolutions according to the capabilities of the SetTopBox:

Supported video signals (for STB):

576i, 576p, 480i, 480p, 720p, 1080i

Connecting

Connect the device to EXT 7 via the VGA cable. See page 22 for the sound connection.

Registration in the connection wizard is not necessary.

Adjusting the geometry

Using this function, you can adjust the horizontal/ vertical position of the picture. (Page 38)

Setting the colour standard

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Picture”, and then press ▼ to move down.

3 Press ▲/▼ to select “Colour standard”, and then press ▼ to move down.

4 Press ◀/▶ to select “RGB” for PC, and “Ycc” (in rare cases, “Ypp” or “RGB”) for STB, and then press **OK**.

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Audio connection

Analogue audio:

Connect the analogue audio signal from the PC or the SetTopBox via stereo cable to the AUDIO IN (L/R) jack on the TV set.

- The sound is played via the speakers connected to the TV set or a speaker system.

Digital audio:

- An external digital audio signal can be reproduced via the integrated Dolby Digital Decoder or via an externally connected digital audio amplifier.

1 Connect the digital audio signal from the PC or the SetTop-Box via a simple cinch cable to the DIGITAL AUDIO (IN) socket on the TV set.

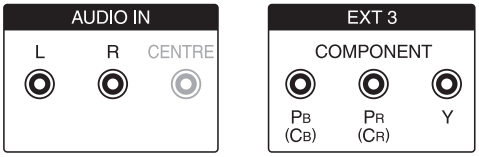
2 Then assign the digital audio input in “TV menu > Connections > Miscellaneous > Assign digital audio input”.

For an external digital audio amplifier:

1 **Prerequisite:** External audio amplifier is already connected. (Page 22)

2 Feed the digital audio signal of the DIGITAL AUDIO (OUT) socket on the TV set to the external amplifier.

Component connection (EXT3)



DVD players/recorders with component video connections can also be connected to EXT 3 (COMPONENT) of the TV set instead of to the SCART sockets.
The connecting cable with three cinch plugs transmits the picture information with better quality than a SCART cable. You need an additional cable for audio transmission.
The basic procedure of setting up a component connection (cable connection and audio connection) is the same as explained in the previous section, “**VGA/ XGA connection (PC/SetTopBox)**”, except:

When adjusting the parameters in “Signal type at socket EXT3”, select “Automatic” if you are not sure. Read the operation manual of the external device for other options.

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PC compatibility chart

Resolution		Horizontal Frequency	Vertical Frequency	Analogue (D-Sub)	Digital (HDMI)	VESA Standard
VGA	640 × 480	31.5 kHz	60 Hz	✔	✔	×
SVGA	800 × 600	37.9 kHz	60 Hz	✔	✔	×
XGA	1024 × 768	48.4 kHz	60 Hz	✔	✔	×
SXGA	1280 × 1024	64.0 kHz	60 Hz	✔	✔	×
FULL HD	1920 × 1080	67.5 kHz	60 Hz		✔	

VGA, SVGA, XGA and SXGA are registered trademarks of International Business Machines Corporation.

NOTE

- This TV has only limited PC compatibility, correct operation can only be guaranteed if the video card conforms exactly to the VESA 60Hz standard. Any variations from this standard will result in picture distortions.

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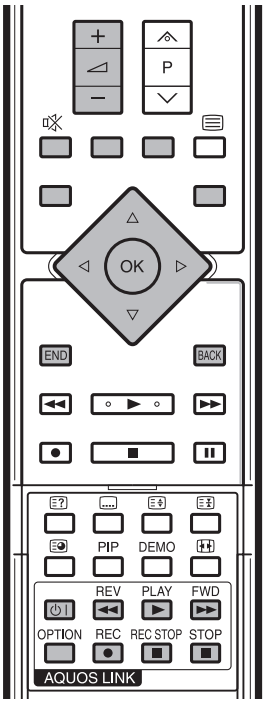
Controlling HDMI devices using AQUOS LINK

What is AQUOS LINK?
Using the HDMI CEC (Consumer Electronics Control) protocol, with AQUOS LINK you can interactively operate compatible system devices (AV amplifier, DVD, Blu-ray Disc device) using a single remote control.



NOTE
- AQUOS LINK-compatible AQUOS BD Player, AQUOS Audio speaker system and AQUOS Recorder are to be on sale after the release of this TV. (As of July 2007)

What you can do with AQUOS LINK

✔ One Touch Recording
You do not have to search for the remote control of your recording device. Press the **REC** ● or **REC STOP** ■ buttons inside the flip cover to start/stop recording what you see on the TV.

✔ One Touch Play
While the TV is in standby mode, it automatically turns on and plays back the image from the HDMI source.

✔ Single remote control operation
The AQUOS LINK automatically recognises the connected HDMI device and you can control the TV and the devices as if using a universal remote control.

✔ Operating Title list of external devices
In addition to displaying the TV's own Timer list (page 34), you can also call up the external player's Top menu or AQUOS BD Player's/AQUOS Recorder's Title list provided that the devices support AQUOS LINK.

✔ Multiple control of HDMI devices
You can select which HDMI device to operate using the **OPTION** button.

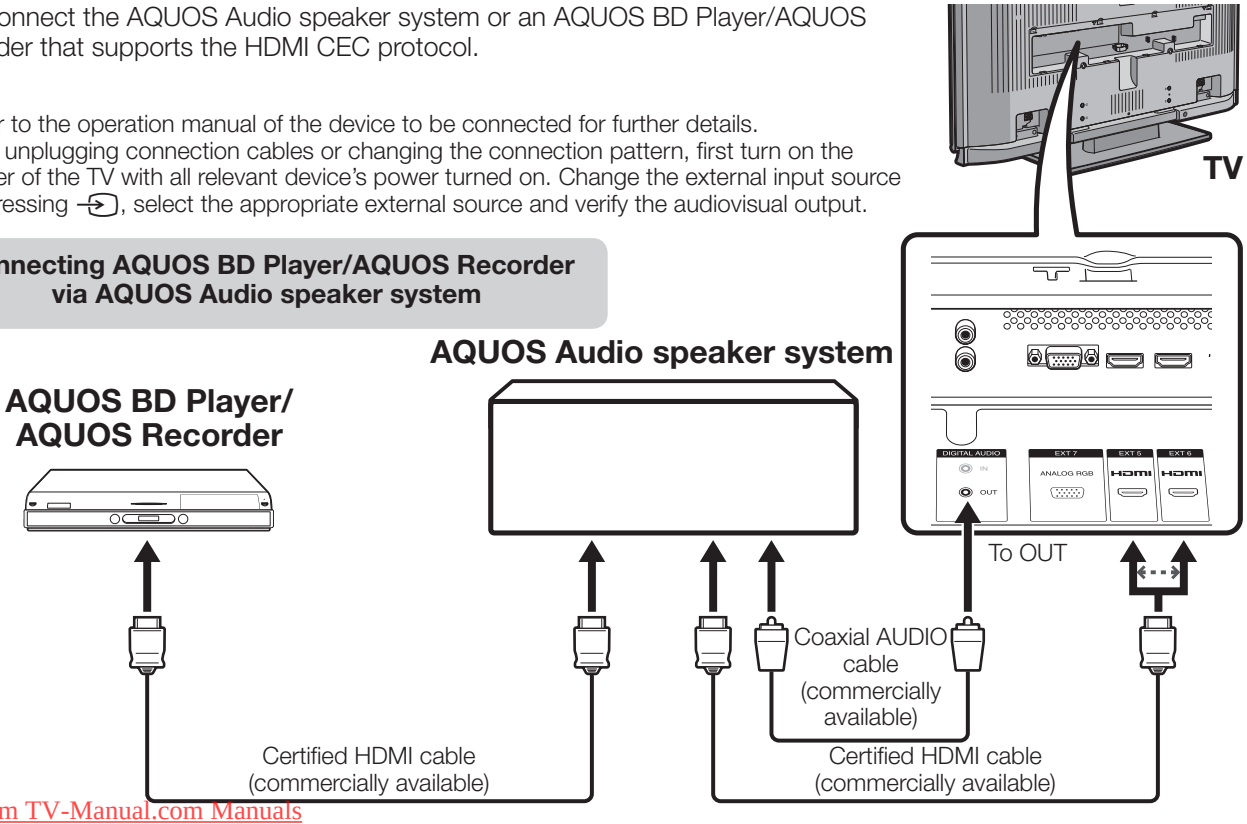
NOTE
- Point the remote control toward the TV, not to connected HDMI device.
- Video noise may occur depending on the type of HDMI cable used. Make sure to use a certified HDMI cable.
- Up to 3 HDMI recording devices, one AV amplifier and two players can be connected using this system.
- These operations affect the HDMI device selected as the current external source. If the device does not operate, turn on the device and select the appropriate external source using ⏎.

Connecting HDMI device to TV

First connect the AQUOS Audio speaker system or an AQUOS BD Player/AQUOS Recorder that supports the HDMI CEC protocol.

NOTE
- Refer to the operation manual of the device to be connected for further details.
- After unplugging connection cables or changing the connection pattern, first turn on the power of the TV with all relevant device's power turned on. Change the external input source by pressing ⏎, select the appropriate external source and verify the audiovisual output.

Connecting AQUOS BD Player/AQUOS Recorder via AQUOS Audio speaker system



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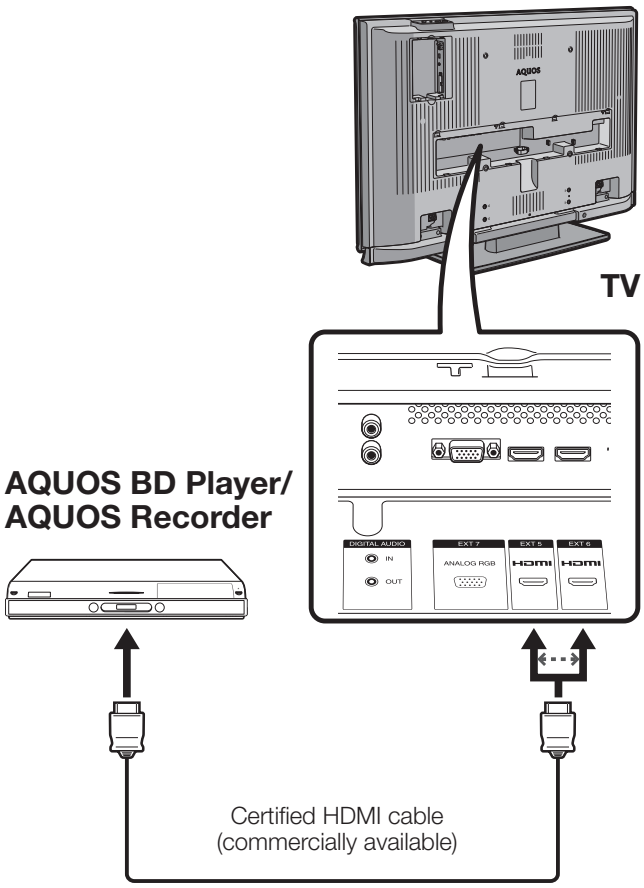
Connecting an AQUOS BD Player/ AQUOS Recorder only



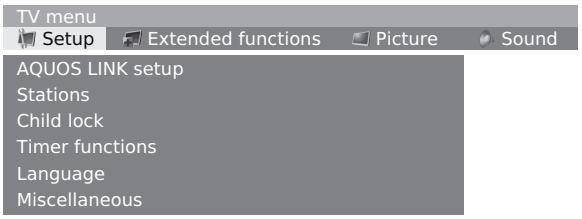
AQUOS LINK setup

AQUOS LINK Auto power on

If this is activated, the One Touch Play function is enabled.
While the TV is in standby mode, it automatically turns on and plays back the image from the HDMI source.

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Setup”, and then press **OK**.



3 Press ▲/▼ to select “AQUOS LINK setup”, and then press **OK**.

4 Press ▲/▼ to select “Auto power on”.

5 Press ◀/▶ to select “yes”.

NOTE
- The factory default for this item is “no”.

Selecting recorder

Here, you can select a recorder for the recording from several connected recorders.

1 Repeat steps 1 to 3 above.

2 Press ▲/▼ to select “Recorder selection”, and then press **OK**.

3 Select the recorder, and then press **OK**.

NOTE
- If you have connected AQUOS Audio speaker system between the TV and AQUOS Recorder, External source’s indication changes from “EXT5” to “EXT5 (Sub)”, for example.

AQUOS LINK One Touch Recording

Preparation
Make sure your CEC-compatible recorder is ready to record. Check antenna and cable connections and the remaining capacity of the HDD or DVD disc.

1 Open the remote control’s flip cover.

2 Press **REC** ●.
- The channel of the CEC-compatible recorder now changes to that of the TV, and recording automatically begins.

3 Press **REC STOP** ■ to stop recording.

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Operating an AQUOS LINK device

AQUOS LINK allows you to operate the HDMI-connected device with one remote control.

NOTE

- The AQUOS LINK buttons such as ⏻ |, **REV** ◀◀, **PLAY** ▶, **FWD** ▶▶, **STOP** ■ inside the flip cover should not be confused with the buttons used for HDD operation. See page 45.

1 Open the remote control's flip cover.

2 Press **PLAY** ▶ to start playback of a title.
- This does not start playback of programmes stored in the DR archive.
- See right column, section "**Playback of titles using AQUOS LINK**" if you want to start playback using the list of the titles of the AQUOS BD Player/AQUOS Recorder.

3 Press **FWD** ▶▶ to fast forward.
Press **REV** ◀◀ to reverse.
Press **STOP** ■ to stop.
Press ⏻ | to turn the HDMI-connected device on/off.

Listening with the AQUOS Audio speaker system

You can opt to listen to the TV sound only from the AQUOS Audio speaker system and manually change its sound mode.

NOTE

- The AQUOS LINK buttons such as ⏻ |, **REV** ◀◀, **PLAY** ▶, **FWD** ▶▶, **STOP** ■ inside the flip cover should not be confused with the buttons used for HDD operation. See page 45.

1 Open the remote control's flip cover.

2 Press **OPTION**.

3 Press ▲/▼ to select "By AQUOS Audio SP".

4 Press ◀/▶ to select "yes".
- Select "no" to listen to the TV sound.
- The sound from the TV speaker and headphone terminal is silenced and only the sound from the AQUOS Audio speaker system is audible.

Manually changing AQUOS Audio speaker system's sound mode

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK menu displays.

3 Press ▲/▼ to select "Change sound mode".

4 The sound mode changes every time you press **OK**.
- Refer to the operation manual of the AQUOS audio speaker system for details.

Playback of titles using AQUOS LINK

This section explains how to play back a title in the AQUOS BD Player/AQUOS Recorder.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK menu displays.

3 Press ▲/▼ to select "Top menu / title list", and then press **OK**.
- The linked recorder now powers on and the TV automatically selects the appropriate external input source.
- The title list data from the connected AQUOS BD Player/AQUOS Recorder displays.

4 Select the title with ▲/▼/◀/▶, and then press **PLAY** ▶.

Selecting media type for CEC-compatible recorder

If your recorder has multiple storage media, select the media type here.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK menu displays.

3 Press ▲/▼ to select "Media change".

4 Select the desired medium, such as DVD or HDD. The media type changes every time you press **OK**.

HDMI device selection

If multiple HDMI devices are connected in a daisy chain, you can specify which device to control here.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK menu displays.

3 Press ▲/▼ to select "Model selection", and then press **OK**. The HDMI device changes when you press **OK**, and the menu screen goes out.

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Recording via the AQUOS Recorder EPG (only for recorder)

You can call up the CEC-compatible recorder's EPG and preset timer recordings using the TV's remote control.

1 Open the remote control's flip cover.

2 Press **OPTION**.
- The AQUOS LINK menu displays.

3 Press ▲/▼ to select "AQUOS Recorder EPG", and then press **OK**.
- The external input source switches and the recorder's EPG is displayed.

4 Select the programme to record.
- Refer to the operation manual of the recorder for details.

Using AV Link function

This TV incorporates four typical AV Link functions for smooth connections between the TV and other audiovisual equipment.

One Touch Play
While the TV is in standby mode, it automatically turns on and plays back the image from the audiovisual source (e.g. VCR, DVD).

TV Standby
When the TV enters standby mode, the connected audiovisual equipment (e.g. VCR, DVD) enters standby mode as well.

WYSIWYR (What You See Is What You Record)
When the remote control unit of the connected VCR has the WYSIWYR button, you can automatically start recording by pressing the WYSIWYR button.

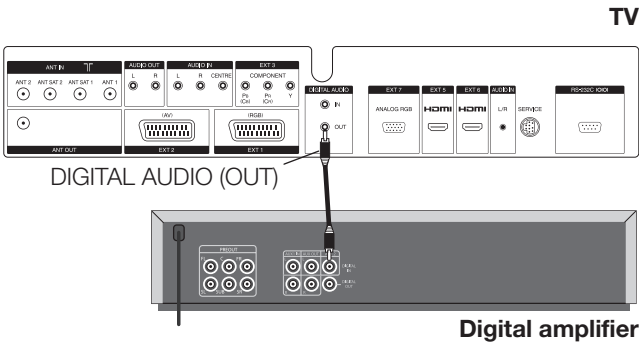
Preset Download
Automatically transfers the channel preset information from the tuner on the TV to the one on the connected audiovisual equipment (e.g. VCR) via the EXT 2 terminal.

NOTE
- Refer to operation manuals of each external equipment for the details.
- The use of the AV Link function is only possible if the TV-set has enforced a complete auto installation with the connected audiovisual equipment (Page 10, initial installation wizard).
  The availability of the AV Link function depends on the audiovisual equipment used. Depending on the manufacturer and type of equipment used, it is possible that the described functions may be completely or partially unusable.

Speaker/amplifier connection

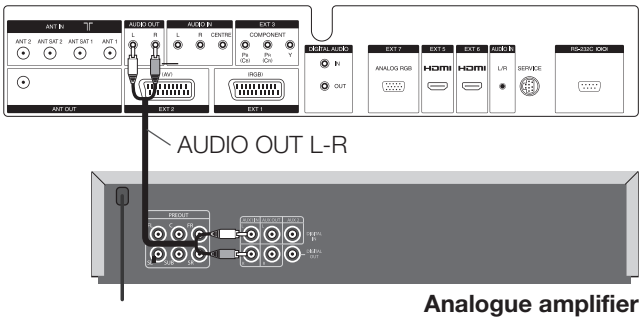
Connect an amplifier with external speakers as shown below.

Connecting a digital amplifier



NOTE
- HDMI audio signals are not output from DIGITAL AUDIO (OUT).

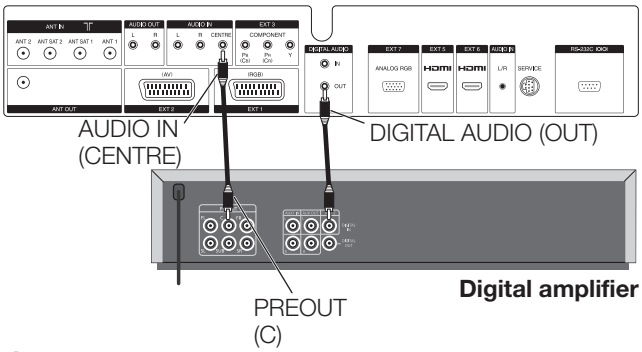
Connecting an analogue amplifier



NOTE
- HDMI audio signals may not be output from the AUDIO OUT L-R.

Using TV speakers as centre speakers

Connect as shown if using the TV speakers as a centre speaker. In this case, make a connection between the centre output of the amplifier and the centre input of the TV (AUDIO IN CENTRE) with a cinch cable.



1 After connecting, go to "TV menu > Connections > Sound components > HiFi/AV amplifier."

2 When you select "Surround amplifier" for "Type of amplifier", make sure to select "yes" for the item "TV loudsp. as centre speaker".

ATTENTION
Do not use the centre speaker connection of the amplifier, use the centre pre-amp output instead!

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Other features

Picture in Picture (PIP)

This TV can display two different images using the PIP function.

Press **PIP** to activate the PIP screen.

GREEN frame:

- This indicates that the operation affects the picture surrounded in a green frame. Pressing **P**∧/∨, for example, will change the channel of the screen surrounded in a green frame. If a green frame is not visible, press **GREEN**.

WHITE frame:

- This indicates the operation does not affect the picture surrounded in white frame. Pressing **P**∧/∨, for example, will change the channel of the screen without the white frame.

Freezing the sub picture

Press **RED** to freeze/unfreeze the image in the sub picture.

Swapping two pictures

Press **YELLOW** to swap contents.

Stations selection

1 Make sure the picture you want to operate is surrounded in a green frame.

2 Select stations normally.

Scanning selection

1 Make sure the picture you want to operate is surrounded in a green frame.

2 Press **BLUE** to start “Scan stations”.
- The frame turns blue, and the stations change automatically.

3 Press **BLUE** again to stop the scanning.
- The frame turns green.

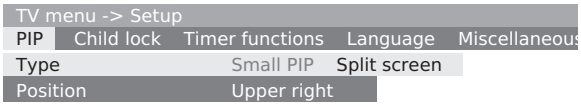
Using the PIP menu

Here you can set the PIP type (split screen or small picture) and the position of the small picture.

1 Press **PIP** to activate the PIP screen.

2 Make sure the picture you want to operate is surrounded in a green frame.

3 Press **MENU** to display the PIP menu. Here you can change the PIP type (“Small PIP” or “Split screen” under “Type”) or the position of the small picture (under “Position”).
- You can also move the small picture to a different corner of the screen by using ▲/▼/◀/▶.



Limitations during PIP mode

- **Depending on the combination of HDTV signals, PIP mode may not be displayable.**
- **You cannot display two encoded stations at the same time.**
- **During recording, the picture change and station selection is restricted.**

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Using PhotoViewer

This TV is equipped with PhotoViewer, allowing you to view pictures in the standard JPEG format via a USB stick or a memory card in a card reader. In addition you can arrange the pictures into a Slideshow.

Connecting

Insert a card reader (with a USB cable) or a USB stick into the USB terminal on the TV (see page 6). Should you find it difficult to connect a USB cable due to the TV installation pattern (e.g., wall-mounting), use a USB extension cable (commercially available.)

NOTE

- Depending on the model of a card reader or USB stick, the TV may not be able to recognise the contained data.
- Use only alphanumeric characters for naming a Photo Viewer file.
- Do not disconnect a USB stick from the TV while transferring pictures, using Slide Show, or when a menu screen is switching to another.
- Do not connect and disconnect a USB stick from the TV repeatedly.

Starting PhotoViewer

PhotoViewer starts automatically when a memory card or USB device with the appropriate data is connected. The first page of the Photo Overview will be shown.

NOTE

- You cannot display image data in progressive JPEG format. A memory card or USB device should contain data in the standard JPEG format.

If a memory device is already inserted and if it is not detected automatically start PhotoViwer as follows:

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Extended functions”, and then press ▼ to move down.

3 Press ▲/▼ to select “PhotoViewer”, and then press **OK**.

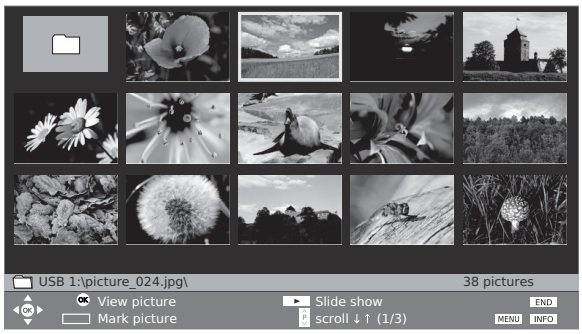
- If several memory cards are present in the card reader, a selection menu opens. Press ◀/▶ to select the desired memory card, and confirm with **OK**.
- When a memory device is inserted, PhotoViewer may not start automatically. Please start PhotoViewer using steps 1-3 above.

Exiting PhotoViewer

Press **END** on the remote control to exit the PhotoViewer screen or remove the memory card or USB device.

Watching photos

EXAMPLE



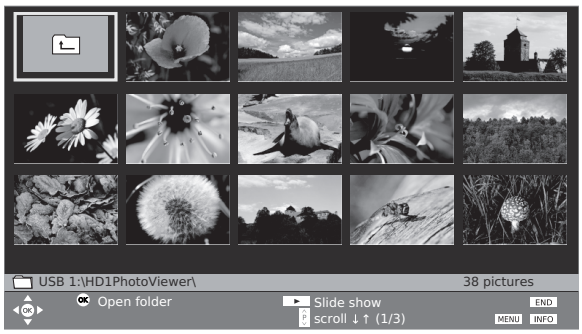
1 Press ▲/▼/◀/▶ to select the picture, press **P**⋀/⋁ if there are more pages.

2 Press **OK** to display the picture in full frame.

✔ Press ▶▶ or **P**⋀ to move to the next image.
✔ Press ◀◀ or **P**⋁ to move to the previous image.
✔ Press **END** to turn the photo information on/off.
• If “Photo info” is set to “on”, extended information appears. (Page 25)
✔ Press **YELLOW** to zoom in on the picture. Zooming in ×2, ×4, ×8 and original size are possible. In the zoom mode you can move the picture around with ▲/▼/◀/▶. To exit the zoom mode press **OK** or ■.
✔ Press ◀/▶ to rotate the image 90 degrees right/left. (You have to pause the Slideshow to rotate pictures.)
✔ Press **OK** or ■ to return to the Photo overview screen.

Opening picture folder

If there is a picture folder within the memory device, press ▲/▼/◀/▶ to select the folder in the Photo Overview screen, and then press **OK** to open the folder.



• The pictures in the folder are displayed.

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Watching Slide show

Starting Slide show

Press ▶ to start/resume Slide show.

NOTE

- If no pictures is selected for Slide show, all the pictures in the memory device are played in Slide show.

While Slide show is in progress (or paused), you can:

- ✔ Press **OK** to display Photo Overview.
- ✔ Press ❚❚ to pause/resume Slide show.
- ✔ Press **YELLOW** to zoom in (only when Slide show is paused).
- ✔ Press ◀/▶ to rotate the image 90 degrees right/left (only when Slide show is paused).
- ✔ Press ▶▶ or **P**∧ to move to the next image.
- ✔ Press ◀◀ or **P**∨ to move to the previous image.
- ✔ Press ■ to end Slide show.

NOTE

- The time length with the picture change may be longer than the time setting in the menu.

Selecting pictures for Slide show

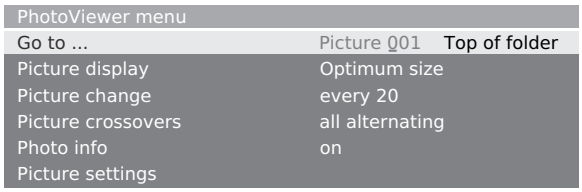
1 Press ▲/▼/◀/▶ to pick pictures to be played in the Slide show, and then press **BLUE** to confirm.

2 Press ▶ to start/resume Slide show with only the selected pictures.

Using PhotoViewer menu

With the PhotoViewer menu you can adjust the picture settings and select the memory device.

While in the PhotoViewer screen, press **MENU** to display the PhotoViewer menu screen.



What you can do with the PhotoViewer menu

Items	Description
Go to ...	You can go to the picture direct or jump to the beginning or end of the file.
Picture display	“Optimum size”: the pictures are made smaller or larger to optimally fill out the screen. “Original resolution”: the pictures are displayed in its original resolution. If the picture resolution is higher than that of the screen, parts of the picture are cut off.
Picture change	You can set the duration of each frame in Slide show between 3 and 60 seconds.
Picture crossovers	You can select 4 different picture transition patterns in Slide show. Also you can select “all alternating” to have the photo transition run in sequence.
Photo info	You can display additional information about the images. They are: time and date, resolution, and picture size.
Picture settings	Here you can adjust: AV mode, Contrast, Brightness, Colour and Sharpness.
Select memory medium	You can select the memory medium for PhotoViewer. This option becomes visible only when there are more than 2 medium inserted to the TV.

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EPG (Electronic Programme Guide)

EPG stands for Electronic Programme Guide and provides you with on-screen programme details. With this system, as with a printed programme guide, you can learn about the current programme. In addition, programmes can be sorted according to certain topics, memorized, and recordings can be programmed.

1 Press **EPG**.

- The first time you start EPG a wizard becomes active (not for DVB), and it guides you through the setup. Then execute the data capture (see next page).
- In the programme list all currently running programmes are first listed.
- The display of the programme guide is divided into two branches. The lower programme list is influenced by the upper search restrictions.
- If necessary press **P**∧/∨ to scroll the pages up/ down.

2 Press **BLUE** to switch between the upper search restrictions “Select date, ..., topics” and the lower programme list.

Tuning in (current programme) or setting programmed viewing (future programme)

1 **Prerequisite**: you are in the lower programme list. (If not, press **BLUE** to switch over.)

2 Select station and press **OK**.

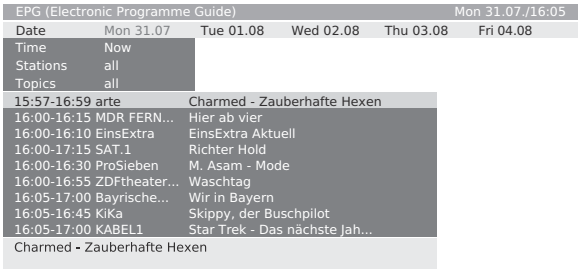
Items	Description
View	The TV set switches to the marked programme in progress.
Memorize	The programme has not yet started and is memorised. A ✔ appears in front of the programme. The TV set switches over automatically at the beginning of the programme or the TV will automatically switch on from standby mode unless it is set not to switch on. (Page 27)

Adjusting the programme list

1 **Prerequisite**: you are in the upper search restrictions. (If not, press **BLUE** to switch over.)

2 Select “Date”, “Time”, “Stations” or “Topics” with ▲/▼.

Select search restrictions for each line.



TIPS

- For example, if you are looking for the next news broadcast, select today’s date, for “Time”, select “Soon”, for “Stations” select “all”, and for “Topics” select “News”. Then you get a list of all news programmes in the programme list below.
- If the line “Time” is selected, then you can enter the time after which the programs will be displayed, via **0 - 9** on the remote control. Always enter four digits, e.g. 0900 for 9:00 AM.
- If a favourites list has been selected in the “Stations” line, only the programmes of stations in the favourites list are displayed in the programme list.
- Before pressing **BLUE** to leave the upper selection lines, select one of the preceding lines. If you then switch back to the programme list, you can change this menu line with ◀/▶ without having to leave the programme list. If you have marked “Time”, then you can enter the time after which the programmes will be displayed using **0 - 9** on the remote control.

Calling additional information about the programmes

Brief information about programmes is displayed under the programme list.

Press ☰ to display detailed information if the ☰ icon is shown.

Presetting a recording

1 **Prerequisite**: you are in the lower programme list. (If not, press **BLUE** to switch over.)

2 Select a desired programme with ▲/▼, and then press **RED** (Record).

- See “Recording wizard - Via EPG” on page 33 for details.

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Using EPG menu

1 Press **EPG**.

2 Press **MENU**.

Items	Description
Select provider	In analogue TV reception, there are possibly different providers who broadcast the EPG data for certain station packages. To get another range of stations, you can change the provider with the “Select provider”. If the provider you are looking for is not in the list, then press **YELLOW** to perform a Provider search. The stations offered by the provider will be displayed in a list.
Station selection	You can remove certain stations from the programme guide. These stations must be deactivated in the station selection. First, all stations for which programme information can be provided are marked with a ✔ . Stations without a ✔ are not included in the programme guide. **Station markings according to reception ranges:** **E**: analogue stations via antenna/cable, for which the current provider supplies data. **T**: digital terrestrial stations DVB-T, **C**: digital cable stations DVB-C, **S**: digital satellite stations DVB-S1/S2.
Data capture	If you want to use EPG for analogue and digital stations, select “on” (for DVB + analogue). If you want to use EPG and only have DVB reception, select “on” (only for DVB). If you are not using EPG and therefore do not want to receive any EPG data, select “off”. After making changes in the EPG menu, or each time the power switch has been switched off, the EPG data must be captured. To do this, switch on the device and select (for analog stations) the station that you have defined as the provider, and let the TV set run for about 1 hour with the selected station. Or switch the TV set to standby mode. After 2 minutes the display on the TV glows orange and the EPG data capture begins. When the data capture process has concluded the display will return to red. The data capture process is usually performed between 2:00 am and 5:00 am, when the TV set is in standby mode.

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Watching DVB broadcasts

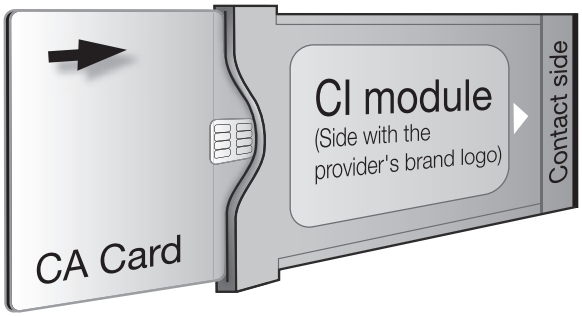
Conditional Access Module (CI Module)

In order to receive coded digital stations, a Conditional Access Module (CI Module) and a CA Card must be inserted in the CI slot of your TV set. (Page 6)
The CI Module and the CA Card are not supplied accessories. They are usually available from your dealer.

Inserting the CA Card into the CI Module

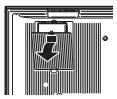
1 Make sure the TV set is switched off with the main power switch (⏻) on the set, or pull the AC plug.

With the side with the gold coloured contact chip facing the side of the CI Module marked with the provider's logo, push the CA Card into the CI Module as far as it will go. Note the direction of the arrow printed on the CA Card.



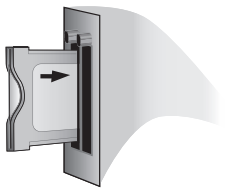
Inserting the CI Module in the CI slot

2 Remove the rear terminal cover.



3 Remove the CI slot cover.

4 Carefully insert the CI Module in CI slot 1 or CI slot 2 with the contact side forward.



The logo on the CI Module must be facing outward, from the rear of the TV. Do not use excessive force. Make sure the module is not bent in the process.

If the CI Module is correctly installed, the eject button protrudes a little further.

Switching on the TV set

After powering on with the new CI Module inserted, a dialogue will appear. You must conduct a station search.

5 Press **OK** to start the station wizard.

6 Check the recommended search routine parameters and then start the search.

7 Replace the cover.

Checking CI Module information

NOTE

- Make sure that CI Module is properly inserted.
- This menu is only available for digital stations.

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select "Setup", and then press ▼ to move down.

3 Press ▲/▼ to select "Miscellaneous", and then press ▼ to move down.

4 Press ◀/▶ to select the CI Module you want to check, and then press **OK**.

- The content of this menu depends on the provider of the CI Module.

Removing the CI Module

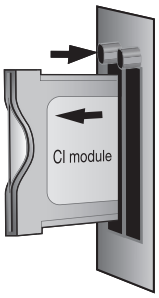
- Switch off the TV set's main power switch (⏻).

1 Remove the cover from the rear of the set.

2 Press in the eject button on the appropriate module slot, and the module will release.

3 Remove the module from the set.

4 Replace the cover.



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Software update

TV base software and DVB software

To ensure that your TV set is always up to date, from time to time SHARP will make updated TV base software and DVB software versions available. These updates are broadcast via satellite (only via ASTRA1).

- This function is not available in some countries.

Automatic search for new software via satellite

The set automatically determines whether a new software version is available via satellite during the night when the EPG data are updated. However the TV set must remain in standby mode for this (do not switch off the set with the power switch).

If a new software version has been found, the set informs you with an on-screen message the next time it is switched on (see right column – “Loading new software”).

Manual search for new software via satellite

If it is not automatically displayed that a new software is available when switching on the set, you can also run a manual search.

The system first checks whether a software update is available via satellite.

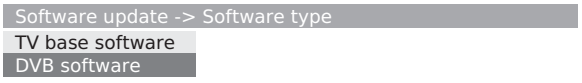
1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Setup”, and then press ▼ to move down.

3 Press ◀/▶ to select “Miscellaneous”, and then press ▼ to move down.

4 Press ◀/▶ to select “Software update”, and then press **OK**.

- The software versions currently loaded in the set are listed.

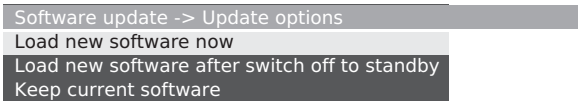


5 Press ▲/▼ to select the desired option, and then press **OK** to start the search.

- If new versions are available then a subsequent screen message will be displayed.

Loading new software

The following will appear if a new software is found via the search.


Software update -> Update options
Load new software now
Load new software after switch off to standby
Keep current software

6 Proceed to the next steps by following the screen prompts.

- A bar is displayed to inform you of the progress of the load process. During the loading process do not switch off your device via the power switch! This may last up to 20 minutes. You will be informed when it is finished.

At the end of loading:

7 Turn off the TV set off with the power switch, unplug the AC cord, and turn it on again.

- If a new software has not been updated via satellite, you will be reminded of this several times after switching on the set.

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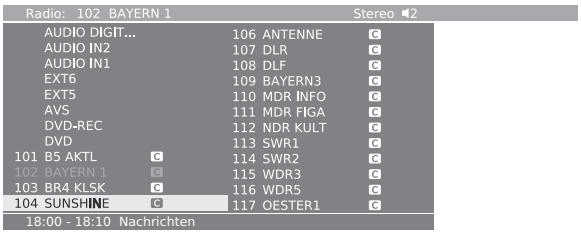
Radio mode

You can only receive radio stations via DVB.
If you do not have DVB radio reception then you can play audio from an external device via the TV set using the audio/AV inputs.

Press **RADIO** to activate the DVB radio mode.



- An overview of the radio stations displays.
- Press **RADIO** again to exit the DVB radio mode.

Switching the screen off and play the radio only

Press **RED** to switch the screen off.

To switch on the screen, press **RED** again.

- You can still change channels with **P**∧/∨ or **0 - 9** on the remote control with the screen turned off.

Using the Radio menu and EPG

Just like in normal TV mode, with the radio menu you can set the sound, search for and store radio stations (automatically or manually), change stations and set switch-off/alarm functions. You can also call up the EPG screen for radio stations.

1 Press **RADIO** to activate the DVB radio mode.

2 Press **MENU** to display the radio menu screen.

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Menu operation

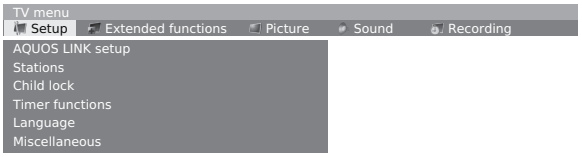
Info display and index feature

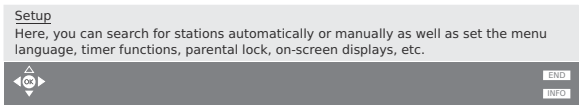
We have designed the TV with integrated content-based information text for each item so that you do not have to worry about reading the operation manual each time. In conjunction with the index feature, this makes a convenient control system.

Using info text

1 Press **INFO** with the menu screen active.

- You can see info text only when INFO icon is shown on the lower right corner of the screen.



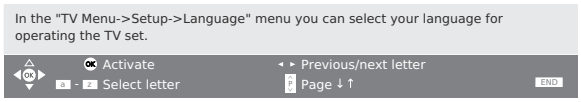

Setup
Here, you can search for stations automatically or manually as well as set the menu language, timer functions, parental lock, on-screen displays, etc.
END
INFO

Using Index

Using Index, you can start all wizards and many operating functions directly from a single point. The complete functional scope of the TV set can thus be easily understood.
Alphabetic sorting is preceded by the items “Language”, “Integrated features” and “Repeat initial installation”.

1 Press **INFO** with no other menu screen active.

2 If “OK” appears in the highlighted line, this function can be accessed directly with **OK**.



Selecting keywords in the Index screen

There are 3 ways to navigate from item to item in the index screen.

① Select initial letters with **0 - 9** on the remote control like with a mobile phone keypad.
② Press ◀/▶ to go to the preceding/next letters, or press ▲/▼ to go from line to line.
③ Press **P**∧/∨ to scroll the page up/down.

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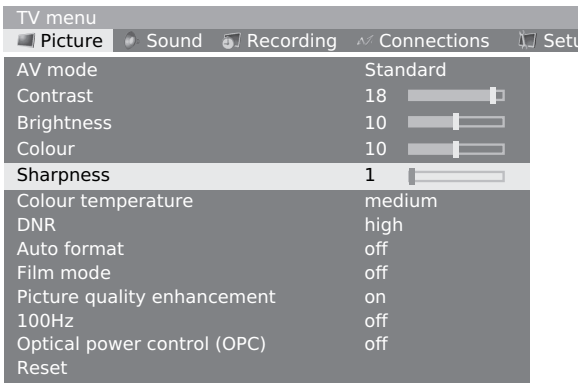
Picture menu

Various picture-related settings can be optimised.



1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Picture”, and then press ▲/▼ to select a desired item.

3 Press ◀/▶ to set/adjust. When you exit the menu the change is adopted.

✔ Picture menu items

Items
AV mode
Contrast*
Brightness*
Colour*
Tint*
Sharpness*
Colour temperature*
Colour standard
DNR
Move picture up/down
Auto format
Film mode
Picture quality enhancement
100Hz
Optical power control (OPC)
Reset

NOTE
- Items with * can be adjusted and reset for each individual AV mode.
- Some items do not appear depending on the type of received signal.
- Press ▲/▼ to select “more...”, if the item you want to adjust is not displayed.
- 100Hz will have no effect in the following cases.
  1) The type of signal received is a PC signal.
  2) An OSD is being displayed.
  3) Teletext is activated.

AV mode

AV mode gives you five viewing options to choose from to best match the system environment, which can vary due to factors like room brightness, type of programme watched or the type of image input from external equipment.

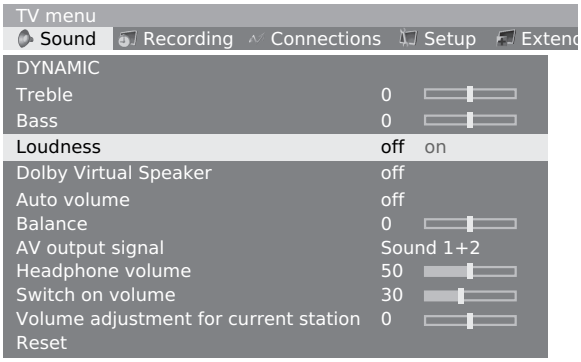
Item

Standard: For a highly defined image in a normally bright room (Enhanced Picture Contrast: On)
Soft: Creates a softer image. (Enhanced Picture Contrast: On)
Eco: Reduces power consumption. (Enhanced Picture Contrast: Off)
Dynamic: For a clear-cut image emphasising high contrast for sports viewing. (Enhanced Picture Contrast: On)
User: Allows the user to customise settings as desired. You can set the mode for each external source. (Enhanced Picture Contrast: Off)

NOTE
- You can adjust the factory presets given in “Standard”, “Soft”, “Eco” and “Dynamic”.
- You can assign different AV mode to each external source.
- Enhanced Picture Contrast technology detects the source video characteristics and smoothly adjusts the screen brightness accordingly, enabling deeper black levels.
- Enhanced Picture Contrast is activated when you turn the OPC function off for the items “Standard”, “Soft” and “Dynamic” in AV mode.

Sound menu

Various sound-related settings can be optimised.



✔ Sound menu items

Items
Treble*
Bass*
Loudness
Dolby Virtual Speaker (See page 33 for its functions.)
Auto volume
Balance
Loudspeaker sound
AV output signal
Headphone volume
Switch on volume
Volume adjustment for current station
Reset

NOTE
- Items with * can be adjusted and reset for each individual AV mode.
- Some items do not appear depending on the type of received signal.
- Press ▲/▼ to select “more...”, if the item you want to adjust is not displayed.

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Dolby Virtual Speaker

The Dolby Virtual Speaker effect simulates a surround sound environment with only two speakers. You can choose between two different settings for the width of the generated sound characteristics.

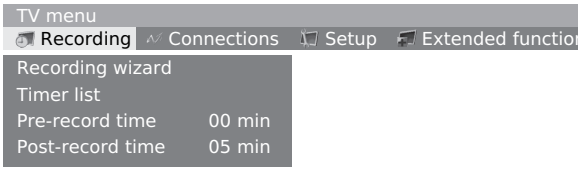
Item

off: No effect
Reference Mode: Creates a convincing five-speaker surround sound listening experience from just two speakers. In this mode, the apparent width of the sound across the front image is defined by the distance between the two speakers.
Wide Mode: Provides a wider, more spacious front audio image from two speakers placed close together, with the same realistic five-speaker surround sound as Reference mode.

Recording menu

You can set timer programmed recordings with the integrated HDD Digital Recorder or other connected recording devices. Further information on HDD recording is provided in the chapter "**HDD Digital Recorder operation**".

- The internal HDD DIGITAL Recorder cannot record signals from the following terminals: EXT 3 (COMPONENT input), EXT 5, 6 (HDMI input), and EXT 7 (PC input).



✔ Recording menu items

Items	
Recording wizard	Via EPG
	Via teletext (VPS)
	Manual
Timer list	
Pre-record time	
Post-record time	

Recording wizard

To record TV programmes, you can use the data from EPG, teletext or enter the data manually.

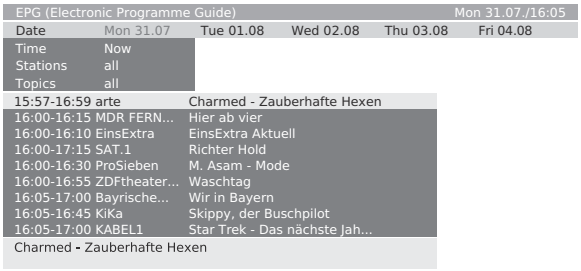
Via EPG

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select "Recording", and then press **OK**.

3 Press ▲/▼ to select "Recording wizard", and then press **OK**.

4 Press ▲/▼ to select "Via EPG", and then press **OK**.


EPG (Electronic Programme Guide)
Mon 31.07./16:05
Date Mon 31.07 Tue 01.08 Wed 02.08 Thu 03.08 Fri 04.08
Time Now
Stations all
Topics all
15:57-16:59 arte Charmed - Zauberhafte Hexen
16:00-16:15 MDR FERN... Hier ab vier
16:00-16:10 EinsExtra EinsExtra Aktuell
16:00-17:15 SAT.1 Richter Hold
16:00-16:30 ProSieben M. Asam - Mode
16:00-16:55 ZDFtheater... Waschtag
16:05-17:00 Bayrische... Wir in Bayern
16:05-16:45 KiKa Skippy, der Buschpilot
16:05-17:00 KABEL1 Star Trek - Das nächste Jah...
Charmed - Zauberhafte Hexen

- The EPG screen displays.
- You may be routed to the "Time and date" entry screen if the TV does not recognise the current time.

5 Press ▲/▼/◀/▶ to select the programme you want to record, and then press **RED**.

- Select a programme that has not yet started.
- A message appears if there is a conflict between two programmes. Follow the screen prompts and choose the one that has priority.

6 The timer list screen appears, outlining each setting used for the upcoming recording. Confirm with **OK**. You can make adjustments as explained in step 3 in the following **Manual** section.

7 Once completed, a red dot will appear in front of the programme as identification.

- To cancel the recording, select a title from the list and press **RED**. If the timer list has already been transferred to an external recorder, then the timer must also be deleted there.

Via teletext (VPS)

1 Select "Via teletext (VPS)" instead of "Via EPG" in step 4 in **Via EPG**.

- The station selection screen displays.
- You may be routed to the "Time and date" entry screen if the TV does not recognise the current time.

2 Press ▲/▼/◀/▶ to select the station you want to record from, and then press **OK**.

3 Press ▲/▼ to select the programme you want to record, and then press **OK**.

- Select a programme that has not yet started.
- A message appears if there is a conflict between two programmes. Follow the screen prompts and choose the one that has priority.

4 Timer list screen appears, outlining each setting used for the upcoming recording. Confirm with **OK**. You can make adjustments as explained in step 3 in the following **Manual** section.

NOTE

- Select the teletext start page according to the station (the default setting is "301").
  For the selection method, follow these steps:
  ① while in the teletext mode, press **MENU** to display the Teletext menu
  ② select "Setup"
  ③ press **OK** on the remote control
  ④ select "Preview pages", and then input the selection value

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Manual

You may enter the necessary information for recording manually.

1 Select “Manual” instead of “Via EPG” in step 4 in **Via EPG**.
- The station selection screen displays.
- You may be routed to the “Time and date” entry screen if the TV does not recognise the current time.

2 Press ▲/▼/◀/▶ to select the station you want to record from, and then press **OK**.

3 Timer list screen appears, outlining each setting used for the upcoming recording. Set the following settings as necessary. Confirm with **OK**.
① Recorder: Selection of the recording device.
② Date: Date of recording
③ Recording time: Time of recording
④ VPS: Selection of using VPS signal
⑤ Recording type: Selection of recording frequency (once only, Mon-Fri, daily, weekly or serial [if EPG data is available]).
- A message appears if there is a conflict between two programmes. Follow the screen prompts and choose the one that has priority.

NOTE
- If you use an external recorder without AV Link, you have to select the recording source in the recorder (e.g. AUX, refer to your recorder’s operation manual). In case of recording DVB programmes, the TV’s tuner is used, not the VCR’s tuner.
- If you use an external recorder with AV Link, this recording source selection is controlled automatically.

Timer list

Here you will find a list of channels already programmed for recording. From here, you can also change the recording data **(GREEN)**, delete programmed recordings completely **(YELLOW)**, or programme a new recording **(RED)** by pressing the assigned colour buttons.

Pre- and post record time

If you record a programme without VPS, you can specify a time span by which your programme time should be brought forward/prolonged so that programmes which begin/end too early/late are recorded from start to finish.

Timer recording with external devices

Recorder with AV Link

If you use an externally connected recorder with AV Link or a similar system, the TV set and connected recorder exchange its own station/timer data.
Please consult the operating manual of your recorder to find out if your recorder is AV Link compatible.
In addition use only Euro SCART cables for the connection between the TV set and recorder.

Analogue stations
The timer data is transmitted automatically from the TV set to the recorder after programming is complete.
The recording is then controlled by the recorder and the recorder tuner is used for reception of the programme.
The recording data is not saved in the timer list of the TV set. Consequently if you want to change or delete the timer data then you must do so on the recorder.

Digital stations
If you want to record digital stations with an externally connected recorder, then the DVB tuner is used and the TV device takes over control of the recorder. Then the station on the TV set is locked during the timer recording.

Recorder without AV Link

If you cannot programme your externally connected recorder from the TV set, but it supports AV Link, the receiver of the TV set is always used.
AV Link must be switched on on the recorder. Read the operating instructions of your recorder.
In addition use only Euro SCART cables for the connection between the TV set and recorder.

Analogue and digital stations
You can control the recording from the TV set. The recorder must be set manually to the AV input to which the TV is connected. Then the station on the TV set is locked during the timer recording.

Copy protection
Copy-protected programs will not be output on the EURO SCART sockets for legal reasons.

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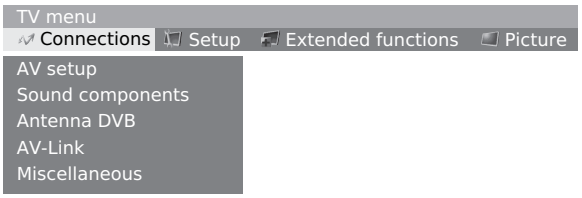
Connections menu

Use this menu when connecting recorders, DVD recorder, etc. There is a wizard which will guide you through the individual steps.



✔ Connections menu items

Items		
AV setup	Connection wizard	
Sound components	TV speakers	
	HiFi/AV amplifier	
Antenna DVB	Antenna DVB-T	Antenna wizard
	Antenna DVB-S	Antenna wizard
AV-Link	Start transmission/Stop transmission	
Miscellaneous	Manual adjustment of AV standard	At EXT1/EXT2/EXT4
	Assign digital audio input	
	Allow switching voltage	
	RGB insertion at EXT1	

AV setup

The integrated Connection wizard shows you which terminal you should connect your equipment to. Then connect the equipment according to the diagram and follow the messages one after another.
A detailed step-by-step explanation is provided on page 16.

Antenna DVB

You can reconfigure the antenna setting after performing initial installation. Read the on-screen instructions carefully or see page 10 for each setting.

AV Link

With this function you can transfer the station data of the TV (such as station preset numbers/names/channels/frequencies) to the recorder if the recorder is set up for AV Link.

Miscellaneous

Here you can change the AV standards, assign the digital audio input, switch the switching voltage on/off and allow RGB settings.

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Setup menu

You can search for stations automatically or manually as well as set the menu language, timer functions, child lock, etc.

Items		
AQUOS LINK setup	Auto power on	
	Recorder selection	
Stations	Search wizard	Change search settings
		Start search/update
	Manual tune	
	Change stations	
	Select/change favourites	
PIP*	Type*	
	Position*	
Child lock	PIN ????	Lock immediately
		Lock daily
		Age-related lock
		Change PIN
		Delete PIN
Timer functions	Switch off today only	
	Switch off daily	
	One-time reminder	
	Wake up Mon-Fri	
	Wake up Sat	
	Wake up Sun	
	Wake up with	
	Wake up signal volume	
Language		
Miscellaneous	Automatic switchoff if no signal	
	On-screen displays	On-screen display time
		Volume
	Time and date	Time
		Deviation from Universal Time
		Date
		Beginning of daylight-saving time
		End of daylight-saving time
	Software update	TV base software
		DVB software
	DVB subtitles	
	DVB character set	

NOTE

* This item appears only when PIP is activated.

Stations

The menu contains the automatic station search and the manual station settings. You can re-sort stations, enter and change station names, and delete stations.

Search wizard

Use this menu to search for stations automatically once certain settings have been made. (See page 10, **Initial installation wizard** for details.)

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select “Setup”, and then press **OK**.

Press ▲/▼ to select “Stations”, and then press **OK**.

Press ▲/▼ to select “Search wizard”, and then press **OK**.

- You will get a table for the auto station search.

3 If necessary select “Change search settings”, and then press **OK**. Otherwise skip to step 6.

4 Press ▲/▼/◀/▶ to select your country or area listed on the screen, and then press **OK**.

5 Follow the menus and make necessary settings one after another.

6 Press ▲/▼ to select “Start search/update”, and then press **OK**.

NOTE

- The station search may take some time.
- Do not make any entries or switch off the set during this time.
- When the search has ended you will be shown the found and stored stations sorted in numerical order.
- After the station search has been completed, close the table by pressing **OK**.

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Manual tune

Use the manual tune option when receiving TV signals whose TV/Colour standard deviate from the one specified. However, this requires detailed knowledge.

Change stations

You can move stations, enter or change station names, and delete stations. The operation is the same as explained on page 12, "**To delete, restore, move, and rename stations from the station list**".

Select/change favourites

Each favourites list can contain up to 99 stations.
You can put together the favourites lists to suit your requirements (e.g. topic lists). Other persons using this TV set can create their own favourites lists.
The favourites lists also have the advantage that the stations from different signal sources can be stored in the order of your preference.
Up to 6 favourites list can be stored.

1 Press **MENU** and the TV menu screen displays.

2 Press ◀/▶ to select "Setup", and then press **OK**.

Press ▲/▼ to select "Stations", and then press **OK**.

Press ▲/▼ to select "Select/change favourites", and then press **OK**.

- "Select/change favourites" screen displays.

GREEN: Select the next favourites list.

Renaming favourites

1 **Prerequisite**: Favourites list (right column) must be selected. If not, change the list with ▶.

2 Press **BLUE** to activate the "Rename favourite list", and enter the new name with **0 – 9** as on a mobile phone key pad, and then press **OK** to save the new name.

Adding favourites

1 **Prerequisite**: The "All stations" screen (left column) must be selected. If not, change the list with ◀.

2 Using ▲/▼ or **0 – 9,** mark the stations to be added as a new favourite.

3 Press **OK** to add.

- The new station is added at the end of the favourites list. Once you exit the screen, the change is adopted.

Deleting favourites

1 **Prerequisite**: The Favourites list (right column) must be selected. If not, change the list with ▶.

2 Using ▲/▼ or **0 – 9**, mark the stations to be deleted.

3 Press **OK** to delete.

Or

Press **RED** to activate "Clear favourites list", and then press **OK** to clear the list.

Moving/sorting favourites

1 **Prerequisite**: The Favourites list (right column) must be selected. If not, change the list with ▶.

2 Using ▲/▼ or **0 – 9**, mark the stations to be moved.

3 Press **YELLOW** to activate "Move station".

4 Select the insertion position with ▲/▼ or **0 – 9**.

5 Press **OK** to confirm.

Child lock

With the child lock you can bar access to all stations immediately or daily for a certain time period.
To use this function, you have first to define your PIN.

NOTE

- The TV power will be turned off if no PIN is entered for several seconds.
- **As a precautionary measure, make a note of your PIN on the back of this operation manual, cut it out and keep it in a safe place that children cannot reach.**
- See page 52 if you lose or forget your PIN.

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Timer functions

In this menu you can have the TV set switch off (to standby) daily at a certain time automatically. You can also have it emit an alarm (reminder) daily at a certain time. This is also possible when the TV is in standby mode (wake up).

PIP

In this menu, you can adjust all settings for the Picture-in-Picture display, such as: type, position, window size. To call this menu you must activate the PIP mode. See page 23 for detailed operation.

Language

You can select a language from the Setup menu. Select from among 19 languages. (Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Slovak, Slovenian, Spanish, Swedish, Turkish)

Miscellaneous

There is an explanatory text for each function. If the Info text is not shown, press **INFO** to activate.

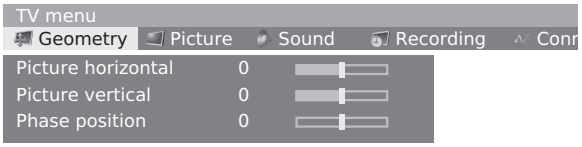
Extended functions menu

The Extended functions menu provides alternative way to access frequently used functions/menus.

Items
DR archive
DVB radio
Favourites
PhotoViewer
Index
Teletext subtitles

Geometry menu

In this menu you can set the geometry values of your connected PC. First connect PC to EXT7 (ANALOG RGB) or to EXT5/6 using HDMI/DVI conversion cable.



Items
Picture horizontal
Picture vertical
Phase position*

* May not be displayable depending on the signal.

Other menu items

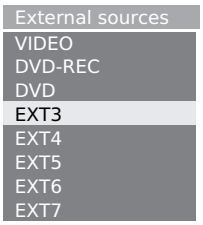
Some of the useful features can be directly called up by pressing assigned buttons on the remote control.

External sources

Use the External Sources screen to select/check the external equipment connected to the terminal(s) on the back of the TV.

1 To watch images from external AV equipment, press ⏎.
- To close the External Sources screen, press ⏎ again.

2 Press ▲/▼ to select the corresponding terminal, and then press **OK**.



NOTE
- If AQUOS LINK-compatible device connected to EXT 5 or 6 sends model-specific data to the TV, its device name is displayed.

Still image

You can freeze a motion picture on the screen.

1 Press ⏸.

2 Press ⏸ again to exit still image.

NOTE
- This function may not be available depending on signal condition.

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Wide modes

You can select the picture size. Selectable picture size varies with the type of signal received.

Basically, if you set Auto format to “on” in the Setup menu, the optimum Wide mode is automatically chosen for every broadcast. You can however, change the screen format manually as explained below.

NOTE
- Aside from manually changing the Wide modes as explained herein, the TV may detect and select the optimum Wide mode according to the signal received.

1 Press ⇔.
- The Wide modes menu displays.
- The menu lists the wide mode options selectable for the type of video signal currently received.

2 Press ⇔ or ▲/▼ while the Wide modes menu displays on the screen.
- As you toggle the options, each is immediately reflected on the screen. There is no need to press **OK**.

Item (for SD (Standard) signal)

Full: For 16:9 squeeze pictures.
Normal: For 4:3 “standard” pictures. A side bar appears on each side.
Panorama: In this mode the picture is progressively stretched toward each side of the screen.
Cinema16:9: For 16:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.
Cinema14:9: For 14:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.

Item (for HD (High-Definition) signal)

Full: Display with the Overscan image. Crop all sides of screen.
Underscan: Display with the Underscan image. (Display with the High-Definition image compressed optimally. Noise may appear on the edge of the screen with some programmes.)

Item (for PC signal)

Full: An image fully fills the screen.
Normal: Keeps the original aspect ratio in a full screen display.
Cinema: For 16:9 letterbox pictures. Bars may appear on the top and bottom with some programmes.
dot by dot: Detects the resolution of the signal and displays an image with the same number of pixels on the screen.

NOTE
- Some items do not appear depending on the type of received signal.

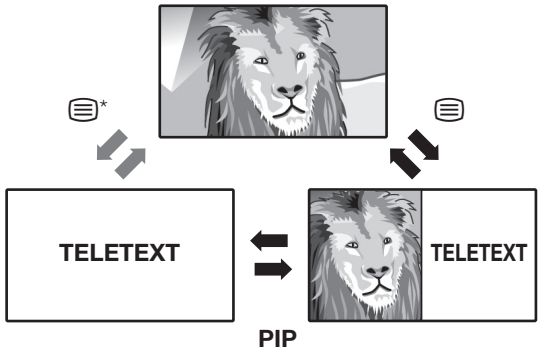
Teletext

What is Teletext?
Teletext broadcasts pages of information and entertainment to specially equipped television sets. Your TV receives Teletext signals broadcast by a TV network, and decodes them into graphical format for viewing. News, weather and sports information, stock exchange prices and programme previews are among the many services available.

Turning on and off Teletext

1 Select a TV channel or external source providing the Teletext programme.

2 Press ☰ to display the Teletext on the right screen and the normal image on the left screen.
- Many stations use the TOP operating system, while some use FLOF (e.g. CNN). Your TV supports both these systems. The pages are divided into topic groups and topics. After switching on the teletext, up to 2000 pages are stored for fast access.
- From the dual screen, press ☰ to return to the normal screen.
- From the dual screen, press **PIP** to display teletext in the entire screen. Once this is done, you can go back to the normal screen by pressing ☰ as shown.
- If you select a programme with no Teletext signal, “No text” displays.
- The same message displays during other modes if no Teletext signal is available.



NOTE
- Teletext will not work if the selected signal type is RGB. (“TV menu > Connections > Miscellaneous > Manual adjustment of AV standard”)

* Switching back is available once full screen teletext is displayed.

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Using teletext menu

While in the teletext mode, press **MENU** to display the Teletext menu.

Items	
Newsflash	
Reveal/Conceal	
Recording wizard	
Setup	Preview pages
	Sub-title pages
	Character set
	HiText

Buttons for teletext operation

Buttons	Description
Colour (Red/ Green/ Yellow/ Blue)	Select a group or block of pages displayed in the coloured brackets at the bottom of the screen by pressing the corresponding **Colour (Red/Green/ Yellow/Blue)** on the remote control unit.
0 - 9	Directly select any page from 100 to 899 by using **0 - 9**.
(Top/ Bottom/ Full)	Switch the Teletext image to Top, Bottom or Full.
(Reveal hidden Teletext)	Reveal or conceal hidden information such as an answer to a quiz.
(Freeze/ Hold)	Stop updating Teletext pages automatically or release the hold mode.
(Subtitle for Teletext)	Display the subtitle or exit the subtitle screen. • Subtitle will not be displayed when the service does not contain the subtitle information.
(Subpage)	Reveal or hide subpages. • ◀/▶ button: Select subpage. • **RED** button: Move to the previous page. • **GREEN** button: Move to the following page. • These two buttons are shown on the screen by the signs − and +.

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HDD Digital Recorder operation

Important information

Hard disk (HDD)

This TV set records programmes onto a hard disk drive (HDD). The hard disk is equipped with a safety mechanism to protect data from impact, vibration and dust. However, to prevent loss of recorded data, you should be particularly careful of the following points:

- Do not subject the TV set to any impact.
- Do not use in a location which is unstable or subject to vibration.
- Do not move the TV set while the power is on.
- Do not unplug the power cord from the AC outlet during recording or playback. First turn power "OFF" (the STANDBY indicator glows red), and then unplug the power cord from the AC outlet.
- Do not use in a location with abrupt temperature variation (variation of more than 10°C per hour).
- The TV set will malfunction if used in a cold location (5°C or less) or an extremely hot location (35°C or higher).
- If you carry the TV set from a cold location to a warm location, let the TV set sit for a while before using it.
- In the unlikely event that the hard disk (HDD) malfunctions for some reason, you cannot replace it by yourself. If you disassemble the TV set you will void the warranty. Please contact the nearest service centre approved by SHARP. We cannot provide compensation for data content if data is lost or not recorded.

This TV set has a built-in hard disk drive (abbreviated as "HDD") for recording and playback. Beware of the following points when setting up and using the TV set. Failure to observe these precautions may cause damage to the HDD itself or its content, failure of the disk to operate, or recording of noise.

- Do not subject the TV set to any vibration or impact.
- Do not place the TV set in a cramped location which might block the cooling fan or ventilation port on the back of the TV set.
- Do not place the TV set in a location with severe temperature variation.
  If the TV set is set up in a location with severe temperature variation, dew may form on and inside the TV set. If the TV set is used with internal dew formation present, this may cause HDD damage or malfunction. We recommend keeping variation in room temperature within 10°C per hour.
- Do not place the TV set in a location with high humidity.
- Place the TV set horizontally, never at an incline.
- When the power is on, do not unplug the power cord from the AC outlet, do not turn off the breaker for the area where the TV set is set up, and do not move the TV set.
  When moving the TV set, first turn off the power (the STANDBY indicator glows red) and then unplug the power cord from the AC outlet.

Unrecordable material

- The only signals that can be recorded are those from the internal analog & digital tuners and external CVBS & Y/C signals.
- When recording a signal other than the signal being watched, some signals cannot be recorded depending on the signal being viewed.
- This TV set is equipped with a copy guard function that prevents the recording of broadcast programmes that contain a signal that restricts copying in accordance with copyrights and so forth.
- If a copy guard signal is contained in a source video that occurs partway through recording, recording is paused at that point. Recording resumes when the copy guard signal is no longer present, while no recordings will be made for the part where the copy prevention signal is present.

In the unlikely event that there is a problem such as the loss of recorded video or audio content due to an HDD malfunction, please be aware beforehand that SHARP will bear no responsibility to compensate for the content which could not be recorded or edited, for the loss of recorded or edited video, or for other related direct or indirect damages.

If a power failure occurs

- The content being recorded or timer recorded may be damaged if a power failure occurs.
- The content being played back may be damaged.

For important recording

- If the HDD malfunctions, the content recorded on the HDD may be lost. If you wish to save content permanently, we recommend copying or moving the content to DVD-RW or DVD-R.

NOTE

- If a message indicating an HDD error is displayed and the HDD has malfunctioned, you cannot replace the HDD by yourself. If you disassemble the TV set, the warranty will become void. Also, recovery of data is impossible. If playback is possible, re-record the recorded content onto a DVD-RW/R disc, and contact your nearest service centre approved by SHARP.

Copyright

- Recording and playback of any material may require consent. Please refer particularly to the provisions of the copyright Act 1956, the Dramatic and Musical Performers Protection Act 1958, the Performers Protection Acts 1963 and 1972 and to any subsequent statutory enactments and orders.
- This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorised by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Apparatus Claims of U.S. Patent Nos. 4,631,603; 4,819,098; 4,907,093; 5,315,448; and 6,516,312 licensed for limited viewing uses only.

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Features

About the Digital Recorder system

Your SHARP TV set is equipped with a Digital Recorder that includes a hard disk. You can use this to record and playback picture and sound from TV programmes, like with a VCR or DVD recorder. HDTV programmes can also be recorded and played back. However, the possibilities of the Digital Recorder are far more versatile than those of a VCR or DVD recorder:

✔ Time shift viewing

When you're watching TV, the phone rings …
Don't worry. You can pause a TV programme and continue playing it later.

✔ Chasing playback

You return home early when a timer-recorded football game is already in progress …
Don't wait. You can simply rewind to the beginning of the game while still recording.

✔ Simultaneous recording/playback

You don't have to sit and wait until the recording ends. You can play DVDs or programmes already recorded in the HDD while recording.

✔ Instant replay

You jump back 40 seconds at the press of a button to watch the scene again. The live picture is shown at the same time in the PIP window.

✔ Archiving the time-shifted recording

You can also decide to copy the whole TV programme into the Digital Recorder's archive at the end of a TV programme you have been watching with a time shift.

✔ Fast navigation by jumping

Jump backwards and forwards in the programme at the press of a button.
The jump distance is adjustable.
In addition, the special function "Smart jump" ensures that for each change in jump direction the jump distance is cut in half. This way you can feel your way quickly to a certain spot in the time shift playback.

✔ Fast forward and rewind

You can fast forward and rewind at three different speeds in the programme you are viewing. (Rewind is not possible with HDTV.)

✔ Slow motion

You can watch the programme you are viewing at four different slow motion speeds.

✔ Setting bookmarks

During a football match, for example, you can flag goals or exciting scenes. (For this, the time-shift recording is converted into an archive recording.) For later playback, you can play bookmarks as highlights.

✔ Recording straight into the archive

The archive holds between 20 and 100 hours of programmes, depending on the recording quality set.

✔ Timer recording using EPG or teletext

Comfortably select your favourite programme for recording, from the EPG or teletext. The Digital Recorder records up to 50 timer recordings - even in your absence.

✔ Serial recording

You can conveniently programme serials which run daily, weekly or from Monday to Friday.

✔ Delete Manager

An automatic delete manager always ensures there is sufficient recording space for new programmes.

✔ Editing archived titles

You can sort, edit/rename, lock or delete the titles in the DR archive. You can also delete or hide sections of the selected programme.

✔ Copying your recordings to a video/DVD recorder

Recordings which you wish to watch repeatedly on a long-term basis should be burnt to a DVD or transferred to a video recorder. The programme can then be deleted from the archive. For data transmission to external equipment, you can do this by using the "Copy" command.

Limitation during PIP operation

If on the main screen you see the live picture and you open the PIP picture, generally the background recording for time-shift TV is ended and deleted. With archive recording and time-shift TV, there may be limitations on the stations which you can select for the PIP picture.

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About time shift viewing and archive recording/playback

Playback:
You can playback the programme in various ways, be it the current programme with the time shift or already recorded title from the DR archive. (Page 48)

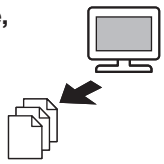
Bookmarking:
You can flag your favourite scenes or goals in football matches in order to watch them again later. (Page 51)

Your Hard Disk can perform ...

Time shift recording
The TV automatically records the programme you are watching if the function is enabled.

Archive recording
You can choose to store the programmes directly into the DR archive.

In archive recording mode, you can also:



- ✔ Directly record a programme into an archive while doing other things.
- ✔ Programme timer recordings using EPG or teletext.
- ✔ Delete, edit, rename or lock the already-archived titles.

Storing time shift recording into an archive:
You can convert the programme you are currently recording with a time shift into an archive. (Page 46)

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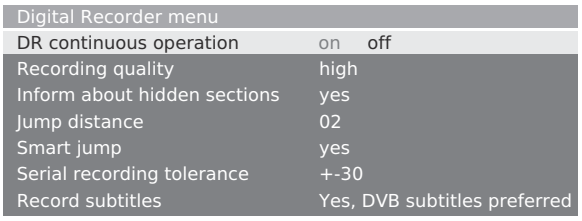
Navigating the Digital recorder menu

You can use the Digital Recorder with the default values set at the factory.
This section explains how to customise these values to meet your own preference. To change the settings, first call the Digital Recorder menu screen as explained below.

1 Press **RED** to display the DR archive menu.

2 While in the DR archive menu screen, press **MENU** to display the Digital Recorder menu screen.


Digital Recorder menu
DR continuous operation on off
Recording quality high
Inform about hidden sections yes
Jump distance 02
Smart jump yes
Serial recording tolerance +-30
Record subtitles Yes, DVB subtitles preferred

3 Press ▲/▼ to select the desired item.

4 Press ◀/▶ to select the desired parameter or enter value with **0 - 9**.

Items	Description	Defaults
DR continuous operation	If DR continuous operation is switched on, recording is continuous to permit time-shift viewing.	on
Recording quality	Adjust the recording quality for recording analogue programmes. This results in a change in the recording capacity.	high
Inform about hidden sections	If a section has been hidden in an existing archive recording you can choose whether to be advised of this by a message or not.	yes
Jump distance	For time-shift viewing and for playing archive recordings you can set a jump distance (in minutes), so that you can jump forwards or backwards in the programmes by pushing the buttons ◀◀ or ▶▶ briefly. Enter the time with the numeric buttons on the remote control (always enter two digits for 01 to 15 minutes).	yes, 02 min
Smart jump	By using the Smart jump function, you can quickly and easily find a certain point in the recording (a time shift or in the archive). Every time the direction is reversed when jumping using the buttons ◀◀ or ▶▶, the jump distance is cut in half. Refer to the next page for more information on this application.	yes
Serial recording tolerance	To avoid recording a serial episode more than once when it is shown several times a day, a tolerance time must be entered. The serial is then only recorded when it starts within the start time ± serial recording tolerance. Enter the time with **0 - 9** on the remote control (always enter two digits for 01 to 60 minutes).	± 30 min
Record subtitles	If DVB or teletext subtitles are to be recorded with DVB programmes, select the priority for subtitles to be recorded here.	no

Setting pre-record time and post record time

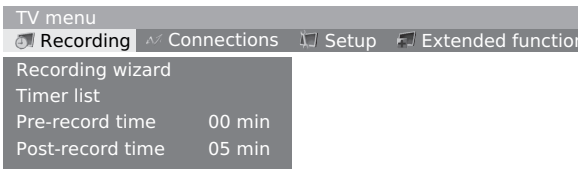
You can set a pre-record and post record time for timer recordings made without VPS. This reduces the risk of parts of the programme not being recorded because it starts earlier and/or finishes later.

NOTE

- Note that this operation is performed via the TV menu, not via the Digital Recorder menu.

1 In the TV mode, press **MENU** to display the TV menu.

2 Select “Recording” with ◀/▶ and press ▼ to move down.



3 Select “Pre-record time” or “Post-record time” with ▲/▼.

4 Enter the time with **0 - 9** on the remote control (always enter two digits for 01 to 15 minutes for the pre-record time, and for the Post-record time 00 to 60 minutes).

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Recording with the HDD

Time shift recording and archive recording
There are 2 ways of recording a TV programme with the HDD. One is Time shift recording and the other is Archive recording.

Time shift recording

The TV automatically records the programme currently tuned in. Pause, rewind, and chasing playback is available with the live programmes just like recorded programmes. Every time you change the channel, the old recording data of the previous channel is discarded and the new recording starts.

- While this is working, the indicator lights green.
- If you choose not to use this feature, set “DR continuous operation” to “off”.
- The maximum time shift duration is approximately 3 hours, depending on the conditions.

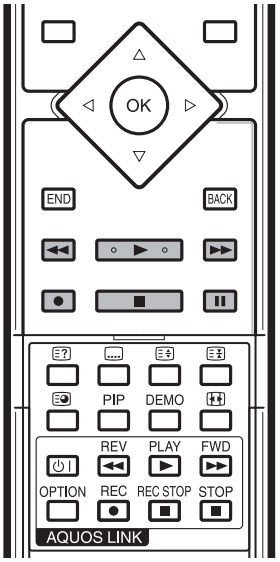
Archive recording

You can record programmes onto the DR archive’s hard disk drive.

About Delete Manager

The Delete Manager always makes sure there is enough memory space on the hard disk for new recordings. When the capacity of the hard disk is almost exhausted, the old recordings are deleted. Recordings which you have marked with delete protection are not deleted by the Delete Manager. You can delete these recordings manually.
For settings and cancelling delete protection, see page 50.
To avoid loss of data, we recommend you copy important recordings onto video tape or a writable DVD, and delete the recordings from the Digital Recorder after copying to save space.
SHARP is not liable for data loss on the Digital Recorder’s hard disk.

Buttons for HDD operation



1 ◀◀ **Rewind**
2 ● **Record**
3 ▶ **Play**
4 ■ **Stop**
5 ▶▶ **Fast forward**
6 ❚❚ **Pause**
7 **Buttons inside the flip cover**

The buttons inside the flip cover are for AQUOS LINK operation and should not be confused with HDD operation. (See page 19 for AQUOS LINK operation.)

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Recording

1 Press ●.

- If time shift is enabled this operation initiates the conversion of time shifted recording into the archive.

Select “current programme” (only if EPG or teletext data is available) or select one of the given minutes, or select “???” and enter the recording duration with **0 - 9** on the remote control and confirm with **OK**.

- The Timer list screen displays.
- If the beginning of the programme was recorded, it is transferred from the beginning, otherwise it will transfer from the point in time you switched over to its station.
- You can also transfer a programme which has already finished to the archive. Just rewind to the programme you want to archive and start archiving as “current programme”.

Configuring the options in the “Timer list” menu screen

Whenever you choose to store the programme into the archive, the Timer list menu screen appears.

- If the DVB subtitles are switched on continuously (see page 44, “Record subtitles”), you see the item “Subtitles (yes/no)” instead of the “VPS” menu item. Here, you can switch the DVB subtitles off for the current recording.
- When you are doing the timer recording, the selection under “Recording type” becomes available.
- Press **GREEN** to lock the programme with the parental lock.
- Press **YELLOW** to protect the programme from automatic deleting.

- **(Time shift only):** If you want to record a programme without DVB subtitles (“subtitles” - “no”), the time-shifted recording that has been running until now is stopped and deleted. The archive recording starts after you have confirmed the timer list with **OK**.
- **(Time shift only):** Programmes with copy protection (e.g. Macrovision) cannot be watched with time shift for legal reasons.

Check the other timer list, change them if necessary and then confirm with **OK** to start recording.

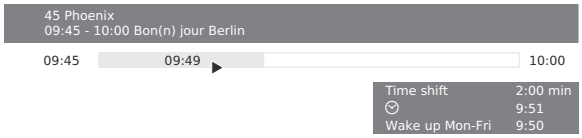
- The indicator turns from green to red.

HINT

- You can switch over to a different station or play the already-recorded titles stored in the DR archive during an archive recording. The recording continues in the background.
- To switch back to the station you are currently recording, press ▶.
- You can also switch off the TV set into standby mode (NOT WITH THE MAIN POWER SWITCH ⏻). The recording continues while in standby.

Status display when recording

Example: time shift



Example: live picture during an archive recording

Example: time shift during an archive recording

Stop recording early

Press ■, and then press **OK** to terminate the active recording.

- You can also end a running recording by deleting the entry in the timer list or in the DR archive.

Recording with subtitles

To record subtitles, the record subtitle function must be active in the Digital Recorder menu. (Page 44)
If one of the subtitle types is broadcast, the subtitles will be recorded. If both subtitle types are broadcast, those subtitles are recorded which you have flagged as “preferred”.
Call the DVB subtitles with the ☰ button during playback. Call teletext subtitles with the **GREEN** and select whether these are to be displayed in normal size or double size.

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Timer recording

You can programme the timer using the EPG, teletext or manually. You can programme up to 50 timer recordings. If you have programmed timer recordings, the TV set may only be switched off into the stand-by mode.

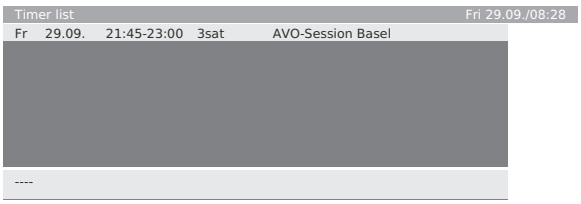
NOTE
- Do not switch the TV set off with the main power switch (⏻) and do not pull the AC plug from the power outlet. If you do, then the timer recording will not take place.

Timer list screen

1 In the TV mode, press **MENU** to display the TV menu.

2 Select “Recording” with ◀/▶ and press ▼ to move down.

3 Select “Timer list” with ▲/▼, and then press **OK**.



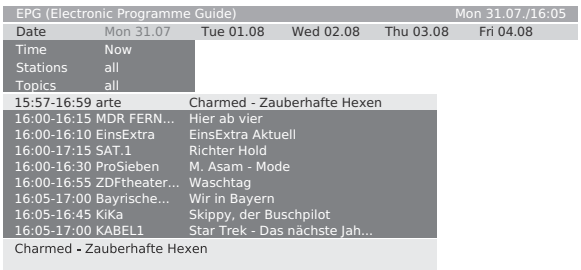
- You can check the list of preset recordings in the Timer list screen. From here you can change/delete preset recordings or start a new recording.

DR archive screen

Press **RED**.
- You can check the completed timer recordings in the DR archive screen.
- On the upper-left corner you see a remaining capacity of HDD drive in hours. Considerable memory space is required on the hard disk for HDTV programmes.

Timer recording via EPG

1 Press **EPG**.


EPG (Electronic Programme Guide)
Mon 31.07./16:05
Date Mon 31.07 Tue 01.08 Wed 02.08 Thu 03.08 Fri 04.08
Time Now
Stations all
Topics all
15:57-16:59 arte Charmed - Zauberhafte Hexen
16:00-16:15 MDR FERN... Hier ab vier
16:00-16:10 EinsExtra EinsExtra Aktuell
16:00-17:15 SAT.1 Richter Hold
16:00-16:30 ProSieben M. Asam - Mode
16:00-16:55 ZDFtheater... Waschtag
16:05-17:00 Bayrische... Wir in Bayern
16:05-16:45 KiKa Skippy, der Buschpilot
16:05-17:00 KABEL1 Star Trek - Das nächste Jah...
Charmed - Zauberhafte Hexen

2 Select the desired programme.

3 Press **RED** (Record) to preset the programme.
- The Timer list screen displays. The rest is the same as explained on page 33.
- When the presetting is complete, the programme is marked with a red dot in the EPG.

You can also:
- Select serial recording types under “Recording type”. The timer then searches for serials in the station set every day. (See “Serial recording tolerance” for details.)

Timer recording via analogue teletext

1 Press **TEXT**.

2 Press ●.
- The first programme preview page is displayed. If not, define the preview page in the teletext menu under “Setup > Preview pages”.

3 Select the programme page containing the programme you want to record, and press **GREEN**.

4 Select the time when the programme begins with ▲/▼.

302 302 ARDtext Do 05. 10. 06 09: 36 : 42
Do 05. 10. 06 Das Erste
14.00 Tagesschau
14.10 In aller Freundschaft UT. 316
Zweite Begegnung (D, 2005)
15.00 Tagesschau
15.10 Sturm der Liebe (221) 317
16.00 Tagesschau UT
16.10 Eisbär, Affe & Co. 318
17.00 Tagesschau um fünf UT
17.15 Brisant 319
17.47 Tagesschau
17.55 Verbotene Liebe 320
18.20 Marienhof 321
18.50 Das Geheimnis meines 322
Vaters (19)
19.20 Das Quiz mit Jörg Pilawa 384
bis 19.50 Uhr
300 << Abend > 303
– + Jetzt im TV ARD morgen
Select programme OK Record

5 Press **OK** to register the timer recording.
- Timer list screen displays. The rest is the same as explained on page 33.
- Check the recording time and date for programmes which last past midnight or begin the following day. The data from the teletext may not be complete.

Manual timer recording

1 In the TV mode, press **MENU** to display the TV menu.

2 Select “Recording” with ◀/▶ and press ▼ to move down.

3 Select “Timer list” with ▲/▼, and then press **OK**.

4 Press **RED** (New recording) to manually programme a new recording.

5 Select “Manual” with ◀/▶, and then press **OK**.

6 Select the station to record with ▲/▼/◀/▶, and then press **OK**.
- The Timer list screen displays. The rest is the same as explained on page 34.

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Deleting programmed timer entries

1 In the TV mode, press **MENU** to display the TV menu.

2 Select “Recording” with ◀/▶ and press ▼ to move down.

3 Select “Timer list” with ▲/▼, and then press **OK**.

4 Select the entry to delete with ▲/▼.

5 Press **YELLOW** (Delete), and confirm with **OK**.
- To abort the deletion, press **YELLOW** again.

Playback

Play

1 Press **RED** to display the DR Archive.

- You can switch between alphabetical and chronological sorting by pressing **BLUE.**
- The bar (on the right in the list) shows you how much of the recording has been watched. The bar is empty for recordings which have not been watched; recordings which have been watched entirely have a bar filled completely; partially watched recordings have a bar which is filled for the parts already watched.
- If other programme data is available from the EPG or teletext, it is shown below the archive list for the entry just marked. Other information about the recording can be displayed by pressing ☰, if available.

2 Select a recording with ▲/▼.

3 Press **OK** to start playback.

Pause

1 Freeze picture with ❚❚.

2 To continue playback, press ▶ or press ❚❚ again.

While viewing with Time Shift:
You want to interrupt a programme to answer a phone call, for example.

Press ❚❚.
- The TV picture freezes and the drive display appears.
- At the top you will see the number and name of the station if EPG or teletext data is available, in addition to the start and end of the current programme and the title of the programme.
- Before the bar you can see the start time for time shift recording. After the bar you can see the time at which the offset recorder will be full (automatically extends by 30 minutes, up to approx. 3 hours). The grey bar indicates how much of the available recording time has been used up. The time displayed inside the bar is the time at which the ❚❚ button was pressed.

You want to carry on watching the programme at the end of the phone call.

Press ❚❚ again or ▶.
- Now you will see the TV programme with a time shift from exactly the point in time you first pressed ❚❚. The Play symbol (▶) appears in place of the Pause symbol (❚❚).

Go live (Time shift only)

Press ■.
- You will then see the live picture of the programme.

Smart jump

The Smart jump function is included to enable fast and easy access to a certain place within the programme. When Smart jump is switched on, the jump distance is cut in half after each change in the jump direction while jumping. By cutting the jump distance in half when changing the jump direction, you can estimate your way close to a particular section.
The playback symbol (▶) is yellow when the Smart jump function is active.
For instance, you are looking for the beginning of a programme …

1 Press ◀◀ several times to jump back (pre-set jump distance).

2 If you have jumped past the beginning of the programme, jump in the opposite direction. Briefly press ▶▶.

3 This jump in the opposite direction is only carried out for half the jump distance. Now jump forward using ▶▶ until you see the beginning of the programme.

4 If you have jumped past the beginning of the programme, jump back using ◀◀. In the process, the jump distance is cut in half again.
- The pre-set jump distance is used again if you jump more than 3 times in the same direction or if the Digital Recorder display disappears.

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Fast forward and rewind

You can fast forward and rewind at 3 different speeds during time shifted TV viewing or archive playback. No sound is audible during winding. (When viewing HDTV, rewind is not possible.)

1 Press Fast Forward ▶▶ or Rewind ◀◀ briefly.

2 Press Fast Forward ▶▶ or Rewind ◀◀ briefly again to increase speed.
- The speed increases every time you press the button until eventually switching back to the initial speed.
- During time shifted TV viewing, playback begins automatically upon reaching the end of the recording.
- During archive playback, you will see a frozen picture when you reach the end of the recording.
- During archive playback, when rewinding reaches the beginning, the Digital Recorder switches to playback mode.

3 Press ▶ when you reach the point from which you want to continue watching.

Jumping

Briefly press ▶▶ or ◀◀ to jump forwards/ backwards.

Slow motion

If Pause is active (picture is frozen) you can play at four slow motion speeds (forward only). Sound is not audible during slow motion.

1 Press ❚❚.

2 Quickly press ▶▶.

3 To increase speed, briefly press ▶▶ several times.
- The speed increases every time you press the button until eventually switching back to the initial speed.

Replay function (Time shift only)

For example, you would like to immediately re-watch interesting scenes or goals in sports programmes. This is possible when viewing a live picture.

1 Quickly press ◀◀ to repeat the scenes.
- The set jumps back 40 seconds into time-shift mode. The playback flag is yellow (Smart jump active). If the Smart jump took you back too far, you can jump forward 20 seconds with ▶▶.
- The live picture is displayed at the same time as a small PIP. This PIP picture can be closed by pressing the **PIP** button without having to leave the time shifted playback.

2 Press ■ to watch the live picture again.

Editing

This sections explains how to edit titles already recorded in the archive.

Deleting parts of the recording

You can delete parts of an archive recording from the beginning and up to the end.

1 During archive playback, press ❚❚ at the starting and ending point from which the archive recording is to be deleted.

2 Press **YELLOW** (Delete/hide).

To delete from here to the beginning, press **RED**.

To delete from here to the end, press **GREEN**.

3 Press **OK** to confirm.
- You can cancel the operation by pressing **RED** again.

Hiding sections of the recording

You can hide sections of an archive recording. For future playback and when transferring to a DVD or video recorder, the hidden sections will be skipped.

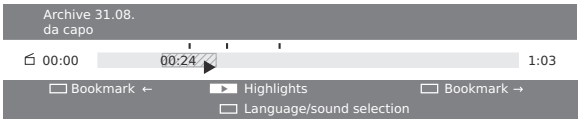
1 Press ❚❚ during archive playback.

2 Press **YELLOW** (Delete/hide).

Press **YELLOW** again to set the beginning of the hidden section.

3 Continue playing by pressing ❚❚ or ▶.

4 Press **YELLOW** to set the end of the hidden section.
- You will see a shaded stripe within the bar that indicates the hidden section of the recording.
- If you start playback again before the beginning of the hidden section, the hidden section is skipped.
- If “yes” is set in the Digital Recorder settings for “Inform about hidden sections” (page 44) you will see the message “Hidden area was skipped!”.
- You can then show the hidden section again permanently by pressing **BLUE**.



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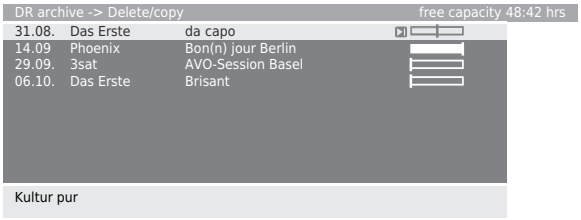
Copying recordings to an external device

This is simple with a VCR or DVD recorder equipped with AV Link.

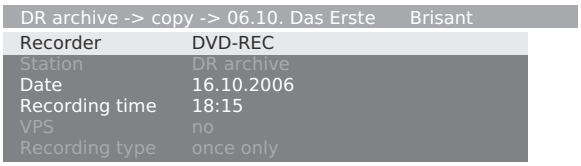
1 Press **RED** to display the DR archive menu.

2 Press **YELLOW** (Delete/copy).


DR archive -> Delete/copy
free capacity 48:42 hrs
31.08. Das Erste da capo
14.09 Phoenix Bon(n) jour Berlin
29.09. 3sat AVO-Session Basel
06.10. Das Erste Brisant
Kultur pur

3 Select the recording to be copied with ▲/▼, select others if necessary.
- Titles to be copied are displayed in blue.

4 Press **BLUE** (Copy entry).



5 Select the recorder in the Copy menu and change the recording date and time if it is to be copied later and confirm with **OK**.
- The DR archive is displayed again. You will see a red dot in front of the bar for the programmed copying for which an entry is also made in the timer list.
- You cannot watch a different station while copying. However, the TV set can be switched off to the standby mode.

Deleting recordings from the archive

1 Press **RED** to display the DR archive menu.

2 Press **YELLOW** (Delete/copy).

3 Select the recording to be deleted with ▲/▼, select others if necessary.
- Titles to be deleted are displayed in blue.

4 Press **YELLOW** (Delete entry).

5 Press **OK** to confirm the deletion.
- The DR archive is displayed again.

Renaming the title of a recording

1 Press **RED** to display the DR archive menu.

2 Press **GREEN** (Edit/protect).

3 Select the title to be renamed with ▲/▼.

4 Press **BLUE** (Rename).

5 Underneath the first letter of the title, you will see a line which indicates the current input position for the letter. Press ◀/▶ to move the character input position. Enter the letters in sequence using the numeric buttons on the remote control (like on a mobile phone keypad).

6 Press **OK** to confirm the change.

Enabling/disengaging parental lock

You can lock movies that your children are not permitted to view, for example. Viewing is only possible if the access code is entered.

1 Press **RED** to display the DR archive menu.

2 Press **GREEN** (Edit/protect).

3 Select the title to be blocked with ▲/▼.

4 Press **GREEN** (Child lock). The TV requires you to enter your access code.

5 Enter your access code with **0 - 9** on the remote control.
- When you set the secret code for the first time you should make a careful note of it.
- The DR archive is displayed again.

6 Press **GREEN** (Lock movie).
- To disengage the parental lock for the selected programme(s), press **GREEN** again.
- You can mark additional titles and lock or release them respectively by pressing **GREEN**. A lock symbol (🔒) appears in front of the bar when the lock is activated.

Watching a locked programme

1 Press **RED** to display the DR archive menu.

2 Select the title with a lock symbol (🔒) to watch with ▲/▼, and then press **OK**. The TV requires you to enter your access code.
- The titles of the locked programmes are not visible and marked with the locked symbol.

3 Enter your access code with the numeric keys of the remote control.
- If successful the playback of the title starts.

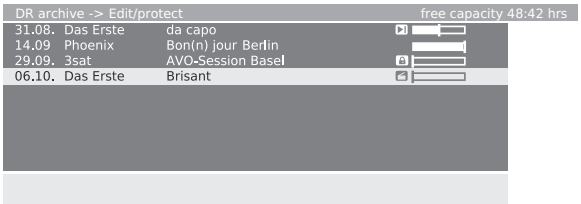
Setting/cancelling delete protection

To prevent important recordings from being deleted automatically by the Delete Manager, you should set a delete protection. Cancel the delete protection again after copying to a video cassette or DVD.

1 Press **RED** to display the DR archive menu.

2 Press **GREEN** (Edit/protect).

3 Select the title for which you want to set (cancel) a delete protection with ▲/▼.


DR archive -> Edit/protect
free capacity 48:42 hrs
31.08. Das Erste da capo
14.09 Phoenix Bon(n) jour Berlin
29.09. 3sat AVO-Session Basel
06.10. Das Erste Brisant

4 Press **YELLOW** (Set delete protection).
- You can cancel the delete protection by pressing **YELLOW** (Cancel delete protection) again.
- The (🔒) symbol appears in front of the bar when the delete protection is activated.

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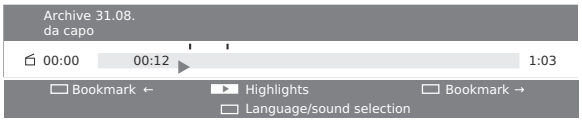
Bookmark

For example, you want to flag interesting scenes and goals of sports programmes in order to watch them again when playing the recording. You can set bookmarks while you are watching the live picture with time shift, while recording into the archive or playing from the archive.

1 Press ▶ briefly in order to set the bookmark.



- You will see the message “Bookmark set!”, or a small bookmark symbol is set above the bar for playback.
- If this is done during a time shift, this initiates the automatic conversion of the live picture into an archive recording.

2 Every time ▶ is pressed down again briefly, a new bookmark is set.

- You can set up to 15 bookmarks per recording.
- In addition, bookmarks are automatically set at the beginning and the end of every broadcast.
- Automatically set bookmarks are grey. Manually set bookmarks are blue.

HINT

- Set a bookmark at the end of an uninteresting passage to skip over it quickly or to hide that section later.

Playing bookmarks as highlights

If there are manually set bookmarks in the currently played recording, they can be played as highlights one after the other automatically. The playback begins 30 seconds before the set bookmark and ends 30 seconds after it.
The highlights are numbered chronologically and displayed consecutively, i.e. the playback always starts with highlight 1.

1 Press **END** to show the drive display during archive playback.

2 Press ▶ for “Highlights”.

- Highlight playback starts.
- Press **BLUE** to jump to the next highlight, **RED** to the previous highlight.
- You can also press ▶ again to jump to the next highlight.
- If the status display goes out due to the timeout, you can still perform highlight playback by pressing ▶.

3 Press ■ to end highlight playback.

Deleting bookmarks

You can delete all manually set bookmarks in one touch. Bookmarks that were set automatically at the beginning and the end of a broadcast cannot be deleted.

NOTE

- Automatically set bookmarks are grey. Manually set bookmarks are blue.

Deleting bookmarks within a title

1 During archive playback, press ❚❚.

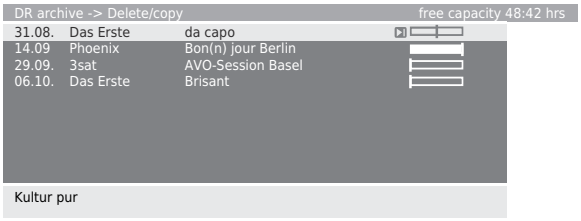
2 Press **YELLOW** for “Delete/hide”.

3 Delete the manually set bookmarks with **BLUE**.

4 Continue playing by pressing ❚❚ or ▶.

Deleting bookmarks from the DR archive

1 Press **RED** to display the DR archive menu.


DR archive -> Delete/copy
free capacity 48:42 hrs
31.08. Das Erste da capo
14.09 Phoenix Bon(n) jour Berlin
29.09. 3sat AVO-Session Basel
06.10. Das Erste Brisant
Kultur pur

2 Select the recording for which you want to delete the bookmarks.

3 Press **YELLOW** for “Delete/copy”.

- Recordings with manually set bookmarks are flagged with ▶I on the left of the bar.

4 Confirm with **OK**, select others if necessary and confirm with **OK**.

- The selected titles are displayed in blue.

5 Press **GREEN** to delete bookmarks.

- All of the manually set bookmarks are deleted. Automatically set bookmarks are not deleted.

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Appendix

Troubleshooting

Problem	Possible Solution
• No power.	• Check if you pressed ⏻ I on the remote control unit. If the indicator on the TV lights up red, press ⏻ I. • Is the AC cord disconnected? • Check if you pressed ⏻ on the TV.
• Unit cannot be operated.	• External influences such as lightning, static electricity, etc., may cause improper operation. In this case, operate the unit after first turning the power off, or unplugging the AC cord and re-plugging it in after 1 or 2 minutes.
• Remote control unit does not operate.	• Is the **FUNCTION** button set correctly? Set it to the TV setting position. (Page 55) • Are batteries inserted with polarity (+, −) aligned? • Are batteries worn out? (Replace with new batteries.) • Are you using it under strong or fluorescent lighting? • Is a fluorescent light illuminated to remote control sensor?
• Picture is cut off.	• Is the image position correct? • Are screen mode adjustments (Auto format, Wide modes or Geometry) such as picture size made correctly?
• Strange colour, light colour, or dark, or colour misalignment.	• Adjust the picture tone. • Is the room too bright? The picture may look dark in a room that is too bright. • Check the colour system setting.
• Power is suddenly turned off.	• The unit's internal temperature has increased. Remove any objects blocking vent or clean. • Did you activate switch off timer? (Page 36) • Is "Automatic switchoff if no signal" activated?
• No picture.	• Is connection to other components correct? (Pages 14-22) • Is input signal type selected correctly after connection? • Is the correct external source selected? (Page 38) • Is non-compatible signal being input? (Page 18) • Is picture adjustment correct? (Page 32) • Is the antenna connected properly? (Page 5) • Are CI Module and CA card inserted properly? (Page 28)
• No sound.	• Is the TV speaker or amplifier settings under "Sound components" set correctly? • Is the speaker connected? • Is the volume too low? • Check if you pressed 🔇 on the remote control unit. • Did you assign the correct input terminal under "Assign digital audio input"?
• The TV sometimes makes a cracking sound.	• This is not a malfunction. This happens when the cabinet slightly expands and contracts according to change in temperature. This does not affect the TV's performance.

Cautions regarding use in high and low temperature environments

- When the unit is used in a low temperature space (e.g. room, office), the picture may leave trails or appear slightly delayed. This is not a malfunction, and the unit will recover when the temperature returns to normal.
- Do not leave the unit in a hot or cold location. Also, do not leave the unit in a location exposed to direct sunlight or near a heater, as this may cause the cabinet to deform and the LCD panel to malfunction.
  Storage temperature: +5°C to +35°C.

IMPORTANT NOTE ON RESETTING THE PIN

We suggest that you remove the following instruction from the operation manual to prevent children from reading it. As this operation manual is multilingual, we also suggest the same with each language. Keep it in a safe space for future reference.

1 Enter "3001" when PIN entry is required.

2 Restore the current PIN under "Change PIN" (TV menu > Setup > Child lock).

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RS-232C port specifications

PC Control of the TV

- When a programme is set, the TV can be controlled from the PC using the RS-232C terminal. The input signal (PC/video) can be selected, the volume can be adjusted and various other adjustments and settings can be made, enabling automatic programmed playing.
- Use an RS-232C cable cross-type (commercially available) for the connections.

NOTE

- This operation system should be used by a person who is accustomed to using PCs.

RS-232C serial control cable (cross type, commercially available)

Communication conditions

Set the RS-232C communications settings on the PC to match the TV's communications conditions. The TV's communications settings are as follows:

Baud rate:	9,600 bps
Data length:	8 bits
Parity bit:	None
Stop bit:	1 bit
Flow control:	None

Communication procedure

Send the control commands from the PC via the RS-232C connector.
The TV operates according to the received command and sends a response message to the PC.
Do not send multiple commands at the same time. Wait until the PC receives the OK response before sending the next command.
Make sure to send "A" with the carriage return and confirm that "ERR" returns before operating.

Command format

Eight ASCII codes + CR

C1	C2	C3	C4	P1	P2	P3	P4	↵

Command 4-digits | Parameter 4-digits | Return code

Command 4-digits: Command. The text of four characters.
Parameter 4-digits: Parameter 0 – 9, blank, ?

Parameter

Input the parameter values, aligning left, and fill with blank(s) for the remainder. (Be sure that four values are input for the parameter.)
When the input parameter is not within an adjustable range, "ERR" returns. (Refer to "Response code format".)

0			
0	0	0	9
–	3	0	
1	0	0	
0	0	5	5

When "?" is input for some commands, the present setting value responds.

?			
?	?	?	?

Response code format

Normal response

O	K	↵

Return code (0DH)

Problem response (communication error or incorrect command)

E	R	R	↵

Return code (0DH)

After sending the return code (0DH), make sure to send line feed (0AH) as well.

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Appendix

Commands

CONTROL ITEM	COMMAND				PARAMETER				CONTROL CONTENTS
POWER SETTING	P	O	W	R	0	_	_	_	POWER OFF
INPUT SELECTION A	I	T	V	D	_	_	_	_	TV (CHANNEL FIXED)
	I	A	V	D	*	_	_	_	EXT1 – 7 (1 – 7)
	I	A	V	D	?	?	?	?	1 to 7, 0 (TV/DTV)
CHANNEL	D	C	C	H	*	*	*	_	TV DIRECT CHANNEL (0 – 999)
	D	C	C	H	?	?	?	?	0 to 999
	C	H	U	P	_	_	_	_	CHANNEL UP
	C	H	D	W	_	_	_	_	CHANNEL DOWN
INPUT SELECTION B	I	N	P	1	0	_	_	_	EXT1 (AUTO)
	I	N	P	1	1	_	_	_	EXT1 (RGB)
	I	N	P	1	2	_	_	_	EXT1 (YUV)
	I	N	P	1	3	_	_	_	EXT1 (Y/C)
	I	N	P	1	4	_	_	_	EXT1 (CVBS)
	I	N	P	1	?	?	?	?	0 to 4
	I	N	P	2	0	_	_	_	EXT2 (AUTO)
	I	N	P	2	1	_	_	_	EXT2 (Y/C)
	I	N	P	2	2	_	_	_	EXT2 (CVBS)
	I	N	P	2	?	?	?	?	0 to 2
	I	N	P	4	0	_	_	_	EXT4 (AUTO)
	I	N	P	4	1	_	_	_	EXT4 (Y/C)
	I	N	P	4	2	_	_	_	EXT4 (CVBS)
	I	N	P	4	?	?	?	?	0 to 2
AV MODE SELECTION	A	V	M	D	0	_	_	_	AV MODE SELECTION
	A	V	M	D	1	_	_	_	STANDARD
	A	V	M	D	2	_	_	_	SOFT
	A	V	M	D	3	_	_	_	ECO
	A	V	M	D	4	_	_	_	DYNAMIC
	A	V	M	D	5	_	_	_	USER
	A	V	M	D	?	?	?	?	1 to 5
VOLUME	V	O	L	M	*	*	_	_	VOLUME (0 – 99)
	V	O	L	M	?	?	?	?	0 to 99

CONTROL ITEM	COMMAND				PARAMETER				CONTROL CONTENTS
GEOMETRY *	H	P	O	S	*	*	*	_	H-POSITION SET
	H	P	O	S	?	?	?	?	H-POSITION READ
	V	P	O	S	*	*	*	_	V-POSITION SET
	V	P	O	S	?	?	?	?	V-POSITION READ
	P	H	S	E	*	*	*	_	PHASE SET
	P	H	S	E	?	?	?	?	PHASE READ
WIDE MODE	W	I	D	E	0	_	_	_	WIDE MODE (Toggle)
	W	I	D	E	1	_	_	_	FULL (SD)
	W	I	D	E	2	_	_	_	NORMAL (SD)
	W	I	D	E	3	_	_	_	PANORAMA (SD)
	W	I	D	E	4	_	_	_	CINEMA 16:9 (SD)
	W	I	D	E	5	_	_	_	CINEMA 14:9 (SD)
	W	I	D	E	6	_	_	_	FULL (HD)
	W	I	D	E	7	_	_	_	UNDERSCAN (HD)
	W	I	D	E	8	_	_	_	FULL (PC)
	W	I	D	E	9	_	_	_	NORMAL (PC)
	W	I	D	E	?	?	?	?	1 to 9
MUTE	M	U	T	E	0	_	_	_	MUTE (Toggle)
	M	U	T	E	1	_	_	_	MUTE ON
	M	U	T	E	2	_	_	_	MUTE OFF
	M	U	T	E	?	?	?	?	1 to 2
Dolby Virtual Speaker	A	C	S	U	0	_	_	_	Dolby Virtual Speaker (Toggle)
	A	C	S	U	1	_	_	_	Reference mode ON
	A	C	S	U	2	_	_	_	OFF
	A	C	S	U	3	_	_	_	Wide mode ON
	A	C	S	U	?	?	?	?	1 to 3
AUDIO CHANGE	A	C	H	A	_	_	_	_	SOUND SELECT (ST/Billingual/ mono)
TEXT	T	E	X	T	0	_	_	_	TEXT OFF
	T	E	X	T	1	_	_	_	TEXT CHANGE
	T	E	X	T	?	?	?	?	0 to 1
	D	C	P	G	_	_	_	_	DIRECT PAGE JUMP (100 – 899)
	D	C	P	G	?	?	?	?	100 to 899

NOTE

- If an underbar (_) appears in the parameter column, enter a space.
- If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.

* Available only in PC mode.

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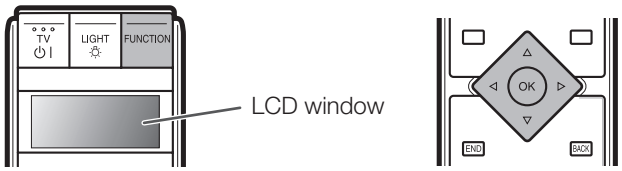
Using the universal remote control

You can operate the connected AV products (DVD player/recorder, SetTopBox, VCR and others) by setting up your remote control as a universal remote control unit.

NOTE

- Some manufacturer code indicated in the operational manual and the universal remote control device do not correspond. When recording a signal other than the signal being watched, some signals cannot be recorded depending on the signal being viewed.



Presetting the manufacturer code

1 Press **FUNCTION** repeatedly until you reach the device you wish to control. (TV, DVD1, DVD2, STB1, STB2 and VCR)

- Press this button briefly (for more than 0.2 second) to move between the items.

2 Press and hold both **FUNCTION** and **OK** for 3 seconds.

- In the LCD window, the 3-digit manufacturer code input screen blinks.

3 Enter the 3-digit manufacturer code using ▲/▼/◀/▶, and then press **OK**.

- The TV returns to the normal TV mode.

LCD Window Display	Category	Manufacturer
DVD1/DVD2	DVD player	Magnum - Zenith
	DVD recorder	JVC - Yukai
	DVD/LD	Pioneer
	DVD part of DVD/VCR	Bush - Toshiba
	DVD part of DVD/DVR	Panasonic - Toshiba
	HTIB*	Aiwa - Sony
	DVD part of SAT/DVD	Humax
	DVD part of TV/DVD	Bush - Toshiba
VCR	VCR part of DVD/VCR	Bush - Toshiba
	VCR part of TV/VCR	Aiwa - Toshiba
	VCR	Adelsound - Yoko
STB1/STB2**	SAT part of SAT/DVD	Humax
	SAT part of SAT-DVR	BSSkyB - Zehnder
	Satellite	AB Sat - Woorisat
	Satellite receiver	Hauppauge
	Satellite receiver/recorder	Humax - Kathrein
	Cable box	ABC - Wittenberg

* Home Theatre in a Box System
** SAT and CBL are integrated.

Manufacturer code

DVD	Manufacturer Code
Sharp	029 128 143 177 191
Magnum	101
Acoustic Solutions	001
Aiwa	004 039 131 231
Akai	034 095
Akura	108
Alba	001 014 017 018 040
Apex	139
Awa	001
Axion	001
Best Buy	107
Bosston	152
Brainwave	034
Brandt	002 012 030
Britannia	150
Bush	001 019 032 042 045 087 092 102 106 149 158 209 223 224 225 226
Cambridge Audio	104 163
CAT	153 154
Celestial	161
Centrex	109
Centrum	154
CGV	104
CineVision	157
Classic	001 100
Clatronic	106
Coby	001
Conia	102
Crypto	159
C-Tech	105
CyberHome	003 022 025 036
Daewoo	023 038 078 113 114 115
Dalton	162
Dansai	034 151 227
Daytek	005 020
DEC	106
Denon	123 138 164 188 199 210
Denver	106 108 133
Denzel	103
Desay	155
Diamond	104 105
Digitor	160
DK Digital	032 176
Dmtech	111
Dual	001 103
D-Vision	034
DVX	105
Easy Home	107
Eclipse	104
Elta	034 124 134
Emerson	129
Enzer	103
Euroline	034
Finlux	104
Fisher	132
Global Solutions	105
Global Sphere	105
Go Video	126
GoldStar	015
Goodmans	001 014 018 045 106 109 158 203 228
Graetz	103
Grundig	018 038 099 109 127
H&B	106 156
Haaz	104 105
Harmon/Kardon	144
HE	001
HiMAX	107
Hitachi	011 047 088 101 103 107 126 190 196 206 215
Home Electronics	001
Humax	048
Innovation	096 101 128
JDB	001
Jeutech	152
JVC	002 016 080 081 082 083 084 085 120 173 182 184 212
Kenwood	037 123 142 170 208 211 219 229
Kingavon	106
Kiss	103 156
Koda	106
KXD	107
Lawson	105
Lecson	151
Lenco	106
LG	015 024 090 129 185 216
Life	096 128
Lifetec	096 101 128
Limit	105
Loewe	044 127
LogicLab	105
Luxor	109

DVD	Manufacturer Code
Magnavox	002 106 165
Marantz	049 098 200 201
Matsui	030
MBO	001 145
Mediencom	150
Medion	096 101 112 128 158
Metz	094
MiCO	104
Micromaxx	096 101 128
Micromedia	002
Micromega	171
Microstar	096 101 128
Mirror	158
Mitsubishi	125 166
Mizuda	106 107
Monyka	103
Mustek	001 100 198
Mx Onda	104
NAD	143
Naiko	109
Nakamichi	147
Neufunk	103
NU-TEC	102
Omni	150
Onkyo	002 097 165
Optim	151
Optimus	168
Orava	106
Orion	087
Oritron	096
P&B	106
Pacific	105
Palsonic	149
Panasonic	013 079 093 123 164 194 195 214 232
Philips	233 002 006 027 035 043 044 049 074 098 121 127 165 171 181 202
Philips Magnavox	121
Pioneer	007 008 010 046 094 168 174 178 183 207 220
Proline	109
Provision	106
Raite	103
RCA	135
REC	149 150
RedStar	108
Reoc	105
Revoy	156
Roadstar	001 014 106 149
Rowa	102 109
Rownsonic	154
Saba	012 030
Sabaki	105
Sampo	136
Samsung	011 076 077 126 175 186 213 217
Sansui	104 105
Sanyo	028 033 089 179 189 218
ScanMagic	001
Schneider	096 110 111 112
Scientific Labs	105
Scott	017 162
SEG	014 026 103 105 110 141
Sherwood	140
Shinco	135
Sigmatek	107
Silva	108
Singer	104 105
Skymaster	001 026 100 105 134
Skyworth	108
SM Electronic	001 105
Sony	004 009 021 031 041 075 122 169 180 204 205 221 222
Soundmaster	105
Soundmax	105
Standard	105
Star Cluster	105
Starmedia	106
Supervision	001 105
Synn	105
TCM	096 101 128
Teac	094 102 105 192
Tec	108
Technics	101 164 193 232
Technika	034
Technosonic	034
Telefunken	154
Tevion	096 101 105 128 162
Thomson	012 091 116 117 118 119 148 167 172 197
Tokai	103 108
Toshiba	002 086 087 121 165 187
TruVision	107

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DVD	Manufacturer Code
United	001
Voxson	001
Vtrek	159
Wharfedale	104 105 130
Wintel	152
Xbox	167
Xlogic	105
XMS	149
Yakumo	109
Yamada	109
Yamaha	006 013 123 137 164 230
Yamakawa	103 146
Yukai	001
Zenith	002 129 165

DVD Recorder	Manufacturer Code
JVC	057 058 059 060
LG	065
Panasonic	052 062
Philips	050 051 053 061 063 064
Sony	054 055 056
Toshiba	067 068 069
Yukai	066

DVD/LD	Manufacturer Code
Pioneer	007

DVD/VCR Combo	Manufacturer Code
Sharp	029 (DVD)/028 032 (VCR)
Bush	087 (DVD)/036 (VCR)
Daewoo	078 (DVD)/029 (VCR)
Hitachi	088 (DVD)/025 (VCR)
JVC	080 081 082 083 084 085 (DVD)/ 007 025 033 034 (VCR)
LG	015 (DVD)/014 030 (VCR)
Orion	087 (DVD)/038 (VCR)
Panasonic	079 (DVD)/031 037 (VCR)
Philips	074 (DVD)/026 (VCR)
Samsung	076 077 (DVD)/210 (VCR)
Sanyo	089 (DVD)/039 (VCR)
Sony	075 (DVD)/027 (VCR)
Toshiba	086 (DVD)/035 (VCR)

DVD/DVR	Manufacturer Code
Panasonic	052 062
Pioneer	070 071 072
Samsung	073
Toshiba	067

HTIB	Manufacturer Code
Aiwa	231
DK Digital	176
Hitachi	215
JVC	184
Kenwood	219
LG	216
Mustek	198
Panasonic	194 195 214
Pioneer	220
Samsung	213
Sanyo	189 218
Sony	205 221 222

SAT/DVD	Manufacturer Code
Humax	048

TV/DVD Combo	Manufacturer Code
Bush	092
LG	090
Panasonic	093
Thomson	091
Toshiba	087

TV VCR combo	Manufacturer Code
Aiwa	042
Bush	042
Daewoo	021 040
GoldStar	209
Goodmans	047
Grundig	041
Orion	045
Philips	041 046
Roadstar	042 045
Samsung	043
Sony	044
Tatung	042
Toshiba	042 043 045 048

VCR	Manufacturer Code
Sharp	001 015 028 032 063 064 073 089 149 150 151 153 165
Adelsound	056
Adyson	055
Aiwa	014 026 042 045 049 050 051 059 060 102 111 149 150 153
Akai	045 050 058 060 128 149 150 153 158 193
Akiba	055
Akura	050 055 060
Alba	021 026 045 051 052 055 058 061 128 129 130
Allorgan	043 126
Ambassador	052 058
Amstrad	026 049 055 061 149 162 189
Anitech	055
Ansonic	056
ASA	053 054 059 149 150 153
Asuka	026 049 053 054 055 059 149
ASWO	179
Audiosonic	061
AudioTon	058
Baird	021 026 049 050 060 061 123 154
Basic Line	021 051 052 055 058 061
Bauer	160 187
Baur	054 070
Beaumark	157
Bestar	021 052 058 061
Black Panther Line	021 061
Blaupunkt	006 008 054 057 069 070 071 083 119 124 125 149 150 151 153 171 179
Blue Sky	051 059
Bondstec	052 055 058
Brandt	009 060 132
Brandt Electronique	154
Brinkmann	051
Broksonic	155 157
BSR	188
Bush	021 026 036 042 045 051 055 061 075 127 128 129 130
Carrefour	121
Casio	026
Cathay	061
Catron	052 058
CGE	026 049 050 060 149
Cimline	051 055
Clatronic	052 055 058
Combitech	045
Condor	021 052 058 061
Continental Edison	154
Crown	021 052 055 058 061
Curtis Mathes	157
Cybermaxx	072
Daewoo	018 021 029 040 045 052 058 061 072 121
Dansai	055 061
Dantax	051
Daytron	021 061
De Graaf	054
Decca	007 026 049 050 054 060
DeGraaf	063 120 123
Denko	055
Denon	098
Diamant	059 209
Dual	026 050 054 060 061 154
Dumont	026 049 054 123
Elbe	061
Elcatech	055
Elin	067 126
Elsay	055
Elta	055 061
Emerson	055 121 155
ESC	021 058 061 126
Etzuko	055
Europhon	058
Ferguson	007 009 026 050 060 071 132 201 202 204
Fidelity	026 049 055
Finlandia	026 054 063 120 123
Finlux	026 049 050 054 080 120 123 149 150 153 197 207
Firstline	018 051 053 055 059 080 114 120 121 127
Fisher	058 122 123 149 150 153 159 178
Flint	051
Formenti/Phoenix	054
Frontech	052 058
Fujitsu	026 049
Funai	026 049 149 150 153 188
Galaxy	026 049
GBC	052 055 058
GE	157
GEC	054
Geloso	055
General	052 058
General Technic	006 043 051
Genexxa	123
Go Video	157
GoldHand	055
GoldStar	026 049 053 059 149 150 153 155 157 209
Goodmans	021 026 047 049 051 052 053 055 058 059 061 067 073 126 127
Graetz	050 060 123 126
Granada	026 054 057 059 063 071 120 123 126
Grandin	021 026 049 052 053 055 058 059 061 072
Grundig	009 041 054 055 057 069 070 071 074 075 076 090 125 149 150 153 173 179 181 182 187
Hanseatic	053 054 059 061
Hantor	058
Harwood	055
HCM	055 075
Hinari	045 051 055 056 060 061 075 127
Hisawa	045 051 166
Hitachi	005 016 019 026 049 050 054 056 060 098 115 120 123 126 149 150 153 175 185
Hypson	051 055 061
Impego	052 058
Imperial	026 049 126 149
Ingersol	056 126
Inno Hit	021 052 054 055 058 061 067 126
Innovation	006 043 051
Interbuy	053 055 059
Interfunk	054 123
Intervision	026 049 051 059 061 209
Irradio	053 055 059
ITT	050 060 077 123 126
ITT Nokia	154
ITV	021 053 058 059 061
JBL	147
JC Penney	098 155 157
JVC	007 025 033 034 050 060 077 078 079 098 105 106 140 149 150 153 154 161 200 204
Kaisui	055
Karcher	054
Kendo	018 021 051 052 055 059 128
Kenwood	050 060
Kimari	122
Kneissel	045 051
Korpel	055
Kuba	122
Kyoto	055
Lenco	021
Leyco	055
LG	010 014 024 026 030 049 053 059 112
Lifetec	006 043 051 072
Loewe	006 137
Loewe Opta	053 054 056 057 059 071 124 131 151 169 179 209
Logik	055 056 067 126
Lumatron	021 061 072
Luxor	055 063 073 080 114 122 123 149 150 153 180 195
M Electronic	026 049 059
Magnin	157
Manesth	018 055 121
Marantz	054 057 071 073 179
Mark	061
Matsui	026 045 051 053 056 059 126 133 162 164
Mediator	054
Medion	006 043 051 072
M-Electronic	026 059 209
Memorex	026 049 053 059 063 098 122 123 155
Memphis	055
Metz	006 008 057 070 071 124 125 131 179 181 187
MGN	157
Micromaxx	006 043 051 072
Microstar	006 043 051 072
Migros	026 049
Minerva	070 071 125 181 187
Minolta	098
Mitsubishi	007 049 054 080 107 114 149 150 153 155 170 199
Multitech	026 049 052 054 055 058 123
Murphy	026 049
National	006 069 124
NEC	007 050 060 154 155 177
Neckermann	050 054 057 060 154 179
NEI	054
Nesco	026 045 055
Nikkai	052 055 058 061
Nokia	050 060 061 063 067 120 123 126 128 180 195
Nordmende	007 009 050 060 077 124 134 149 150 153 154 161 201 204 205
Oceanic	026 049 050 060 063 123
Okano	051 055 061 128
Optimus	155 156
Orion	038 045 051 056 129 130 155 163 166 188 191 192
Orson	026 049
Osaki	026 049 053 055 059
Osume	127
Otake	129 130
Otto Versand	054 187
Palladium	050 053 055 056 057 059 060 071 126 128
Panasonic	002 006 008 023 031 037 069 086 091 101 124 131 137 149 150 151 153 155 167 169 171 174 190 198
Pathe Cinema	056 114
Pathe Marconi	050 060 154
Pentax	098
Perdio	026 049
Philco	055 098
Philips	005 011 017 019 020 026 041 046 054 057 062 065 071 076 077 087 090 092 093 095 100 104 108 110 136 149 150 153 179
Phonola	054
Pioneer	007 054 120 149 150 153 156 203
Portland	021 052 058 061
Prinz	026 049
Profex	055
Profi-Tronic	126
Proline	026 049 075 127
Prosonic	026 051 061
Pulsar	157
Pye	005 054
Quasar	155
Quelle	049 054 057 070 071 149 150 153 179 181 182 187
Radialva	055 059 063
Radio Shack	155
Radiola	054 151
Realistic	155 157
Rex	050 060 077 154 161
RFT	052 054 055 058
Roadstar	021 042 045 053 055 059 061 067 126
Royal	055
Saba	009 050 060 077 138 139 149 150 153 154 161
Saisho	051 055 056 162
Salora	080 114 123 149 150 153 180
Samsung	210 043 067 126 157 176 194 196
Samurai	007 052 055 060
Sansui	007 050
Sanwa	056
Sanyo	039 063 099 109 122 123 149 150 153 180
Saville	045 061 126
SBR	054
Schaub Lorenz	026 049 050 060 123
Schneider	018 021 026 049 051 052 053 054 055 059 061 126 149 150 153
Scott	155
Sears	098 155
SEG	055 061 067 126
SEI-Sinudyne	054 056 188
Seleco	050 058 059 060 154 161
Sentra	052 055 058 127
Sentron	055
Shintom	055 123
Shivaki	053 059
Shorai	056
Siemens	053 057 059 070 071 123 125 179 181 187
Silva	053 059
Silver	061
Sinudyne	054 056
Solavox	052 058
Solovox	058
Sonitron	122
Sonneclair	055
Sonoko	021 061 072
Sonolor	063
Sontec	053 059

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Appendix

VCR	Manufacturer Code
Sony	003 004 013 022 027 044 066 068 082 083 084 085 088 094 096 097 103 113 116 117 118 119 145 146 147 160 168 184 185 186
Soundwave	059
Standard	021 061
Starlite	059 123
Stern	061
Sunkai	051
Sunstar	026 049
Suntronic	026 049
Sunwood	055
Supra	059 126
Symphonic	026 055
Taisho	051 056
Tandberg	061 070
Tansai	149
Tashiko	026 049 059 063 126
Tatung	026 042 049 050 054 060 063 114
TCM	006 043 051 072
Teac	026 060 061
Tec	052 055 058 061
Technics	006 069
Teleavia	050 060
Telefunken	007 009 050 060 077 078 081 132 135 149 150 153 154 161 206
Teletech	055 061
Tenosal	055
Tensai	026 049 053 055 056 059 149
Tevion	006 043 051 072
Thomson	007 009 050 060 065 077 078 098 132 134 138 141 142 143 144 148 152 154 156 157 161 201 204
Thorn	050 059 060 123 154 161 208
Tivo Hdd	065 088
Tokai	053 055 059 060 123 149
Tonsai	055
Toshiba	012 018 035 042 043 045 048 050 054 060 077 080 114 121 154 162 172
Towada	055 183
Towika	055
TVA	052 058
Uher	053 059 126 154
Ultravox	061
Unitech	067 126
United Quick Star	021 061
Universum	026 049 051 053 054 057 059 070 071 076 125 126
Victor	007 078
Videon	006 043 051
Wards	155 157
Weltblick	053 059
Yamishi	055
Yokan	055
Yoko	052 053 055 058 059 067 126

SAT/DVR	Manufacturer Code
Humax	005
BSkyB	035
Humax	007
TechniSat	347 011
Zehnder	034

Satellite	Manufacturer Code
AB Sat	004 056 066 103
AGS	056
Akai	077 001 139
Alba	004 086 095 332 006 036 037 105 106 127 141
Aldes	080 086 003 105 106 107
Allsat	068 076 077 298 003 042 108 139
Allsonic	049 080 088 002 039 106
Alltech	004 097
Alpha	077
Altai	089
Amitronica	004
Ampere	045 089 001 109
Amstrad	004 008 045 050 060 061 079 084 089 098 099 101 165 279 282 292 295 305 313 331 002 038 140
Anglo	004
Ankaro	004 049 078 080 088 286 305 313 331 002 039 106
Anttron	076 095 334 002 036 106
Arcon	045 078 337 003 109 110 123
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Salora	071 288 306 002 111 137
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SAT	050 082 098 003 105 114 115
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Sat Partner	050
Sat Team	004
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Satellite Reciever	Manufacturer Code
Hauppauge	018 029

Satellite Reciever/ Recorder	Manufacturer Code
Humax	005
Kathrein	033

Cable Box	Manufacturer Code
ABC	375
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SAT/DVD	Manufacturer Code
Humax	005 (SAT)/048 (DVD)

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Specifications

Item			46″ LCD COLOUR TV, Model: LC-46HD1E	52″ LCD COLOUR TV, Model: LC-52HD1E
LCD panel			46″ Advanced Super View & BLACK TFT LCD	52″ Advanced Super View & BLACK TFT LCD
Number of dots			6,220,800 dots (1920 × 1080 × 3 dots)	
Video Colour System			PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60	
TV Function	TV-Standard	Analogue	CCIR (B/G, I, D/K, L, L')	
		Digital	DVB-T (2K/8K OFDM)	
	Receiving Channel	VHF/UHF	E2–E69ch, F2–F10ch, I21–I69ch, IR A–IR Jch, (Digital: E5-E69ch)	
		CATV	Hyper-band, S1–S41ch	
	TV-Tuning System		Auto Preset 999 ch, Auto Label, Auto Sort	
	STEREO/BILINGUAL		NICAM/A2	
Brightness			450 cd/m^2	
Backlight life			60,000 hours (at Backlight Standard position)	
Viewing angles			H : 176° V : 176°	
Audio amplifier			7.5 W × 2, 15 W	
Speaker			(100 × 40 mm + 20 mm Ø) × 2, 55 mm Ø	
Terminals	Antenna input		UHF/VHF 75 Ω Din type (Analogue & Digital)	
			Satellite 75 Ω F type (DVB-S1/S2)	
	AUDIO OUT		RCA pin (L/R)	
	AUDIO IN		RCA pin (L/R/Centre)	
	AUDIO IN		Ø 3.5 mm jack	
	EXT 1		SCART (AV input, Y/C input, RGB input, TV output)	
	EXT 2		SCART (AV input/monitor output, Y/C input, AV Link)	
	EXT 3		COMPONENT IN: Y/Pb(Cb)/Pr(Cr)	
	EXT 4		S-VIDEO (Y/C input), RCA pin (AV input)	
	EXT 5		HDMI	
	EXT 6		HDMI	
	EXT 7		15 pin mini D-sub	
	USB		USB 2.0	
	DIGITAL AUDIO		Coaxial SPDIF Digital audio (IN/OUT)	
	C. I. (Common Interface)		EN50221, R206001 (× 2)	
	RS-232C		D-Sub 9 pin male connector	
	Headphones		Ø 3.5 mm jack (Audio output)	
OSD language			Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Russian, Slovak, Slovenian, Spanish, Swedish, Turkish	
Power Requirement			AC 220–240 V, 50 Hz	
Power Consumption			305 W (0.9 W Standby) (Method IEC60107)	335 W (0.9 W Standby) (Method IEC60107)
Weight			36.5 kg (Without stand), 42.5 kg (With stand)	42.0 kg (Without stand), 48.0 kg (With stand)
Operating temperature			+5°C to +35°C	

- As a part of policy of continuous improvement, SHARP reserves the right to make design and specification changes for product improvement without prior notice. The performance specification figures indicated are nominal values of production units. There may be some deviations from these values in individual units.

NOTE

- Refer to inside back cover for dimensional drawings.

Optional accessories

The listed optional accessories are available for the LCD colour TV. Please purchase them at your nearest shop.

- Additional optional accessories may be available in near future. When purchasing, please read the newest catalogue for compatibility and check the availability.

No.	Part name	Part number
1	Wall mount bracket	AN-52AG4

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Attention: Your product is marked with this symbol. It means that used electrical and electronic products should not be mixed with general household waste. There is a separate collection system for these products.

A. Information on Disposal for Users (private households)

1. In the European Union

Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!

Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment.
Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge*. In some countries* your local retailer may also take back your old product free of charge if you purchase a similar new one.
*) Please contact your local authority for further details.

If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements.

By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

For Switzerland: Used electrical or electronic equipment can be returned free of charge to the dealer, even if you don't purchase a new product. Further collection facilities are listed on the homepage of www.swico.ch or www.sens.ch.

B. Information on Disposal for Business Users

1. In the European Union

If the product is used for business purposes and you want to discard it:

Please contact your SHARP dealer who will inform you about the take-back of the product. You might be charged for the costs arising from take-back and recycling. Small products (and small amounts) might be taken back by your local collection facilities.

For Spain: Please contact the established collection system or your local authority for take-back of your used products.

2. In other Countries outside the EU

If you wish to discard of this product, please contact your local authorities and ask for the correct method of disposal.

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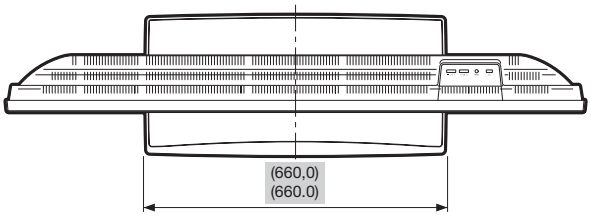
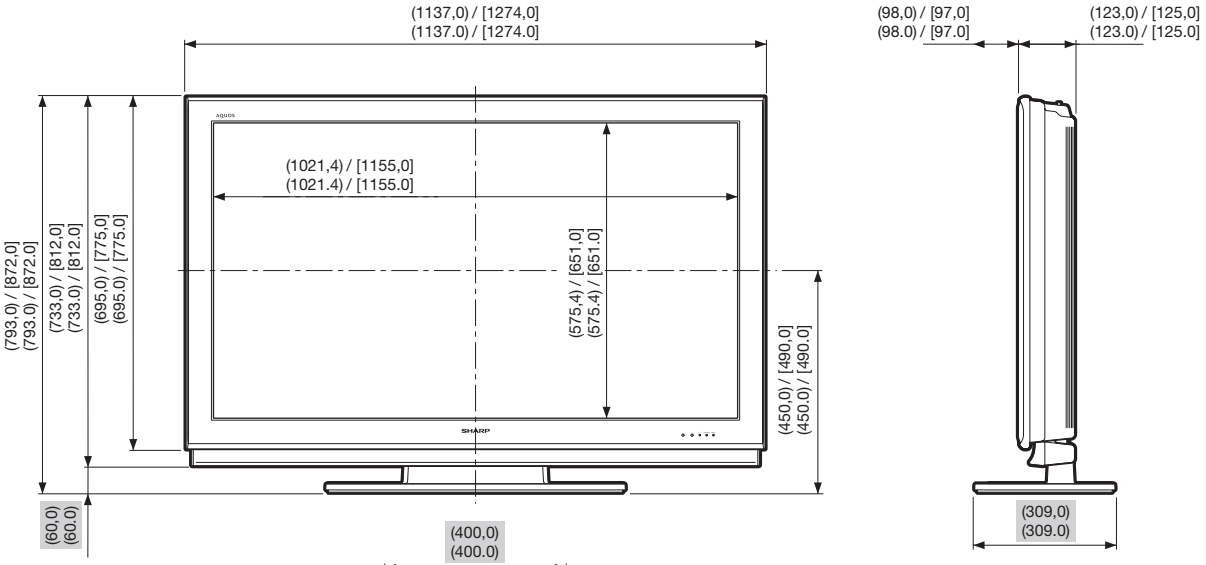
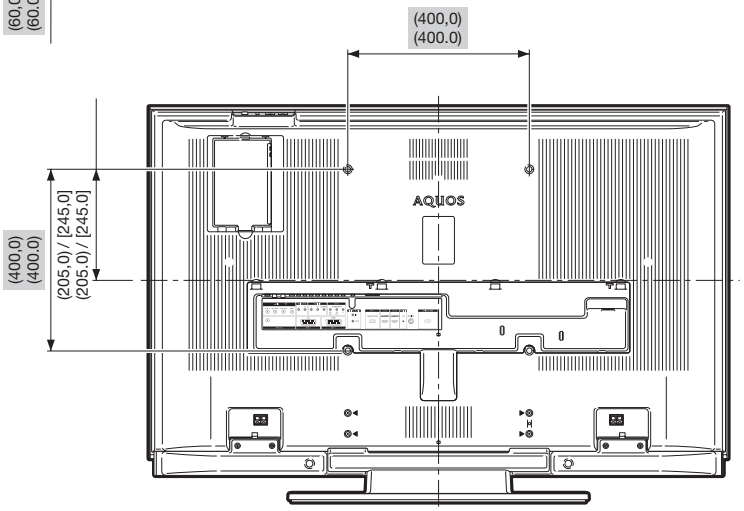
( ) : LC-46HD1E

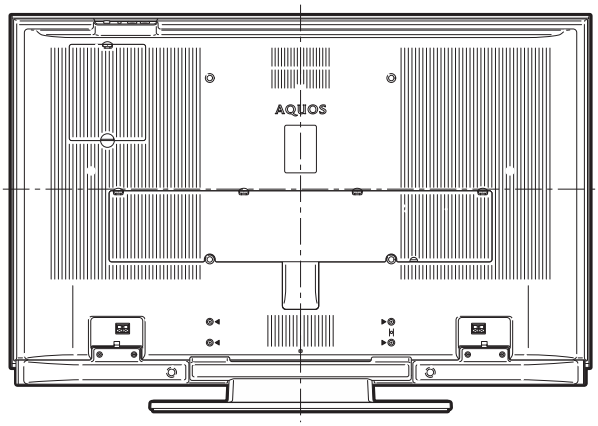
[ ] : LC-52HD1E

: LC-46HD1E
LC-52HD1E









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